SONY

VAIO Digital Studio™ Reference Manual

PCV-E314DS

Notice to Users

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Safety Information

Owner's Record

The model number and serial number are located on the back of your VAIO computer. Record the serial number in the space provided here. Refer to the model and serial number when you call your Sony Service Center.

Model Number: PCV-E314DS

Serial Number:_____

WARNING

- To prevent fire or shock hazard, do not expose your VAIO computer to rain or moisture.
- Never install modem or telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations
- Never touch uninsulated telephone wire or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using the modem during an electrical storm.
- Do not use the modem or a telephone to report a gas leak in the vicinity of the leak.

! The use of optical instruments with this product will increase eye hazard.

Regulatory Information

Declaration of Conformity

Trade Name: SONY
Model No.: PCV-E314DS
Responsible Party:
Sony Electronics Inc.
Address:
1 Sony Drive
Park Ridge, NJ 07656
Telephone No: 201-930-6970

This device complies with Part 15 of FCC Rules. Operation is subject to the two following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Only peripherals (computer input/output devices, terminals, printers, etc.) that comply with FCC Class B limits may be attached to this computer product. Operation with non-compliant peripherals is likely to result in interference to radio and television reception.

All cables used to connect peripherals must be shielded and grounded. Operation with cables, connected to peripherals, that are not shielded and grounded, may result in interference to radio and television reception.

FCC Part 68

This equipment complies with Part 68 of the FCC rules. The ringer equivalence number (REN) and the FCC registration number are printed on the modem board. If requested, this information must be supplied to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the phone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's, contact the telephone company to determine the maximum REN for the calling area.

This modem uses the USOC RJ-11 telephone jack.

If this equipment causes harm to the telephone network, the telephone company will, when practical, notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify you as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operations of the equipment. If this happens, the telephone company will notify you in advance, in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this modem, for repair or warranty information, please contact 1-888-4SONYPC, or write to the Sony Customer Information Center, One Sony Drive, Park Ridge, NJ 07656.

This equipment cannot be used on telephone-company-provided coin service. Connection to Party Line Service is subject to state tariffs.

Repair of the modem should be made only by a Sony Service Center or Sony authorized agent. For the Sony Service Center nearest you, call 1-800-222-SONY (1-800-222-7669).

Telephone Consumer Protection Act of 1991

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone facsimile machine unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message, and the telephone number of the sending machine or such business, other entity, or individual.

In order to program this information into your facsimile, see your fax software documentation.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

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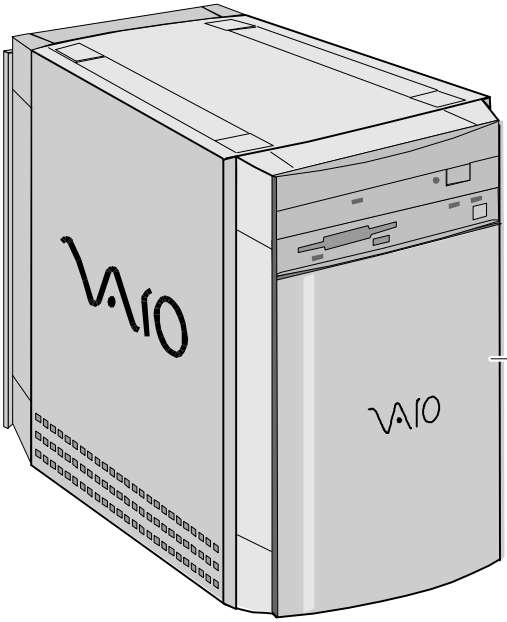
Chapter 1
Identifying Components

The following sections identify and describe each component that is visible from the exterior of the VAIO Digital Studio™ Computer. Internal components are identified in the appropriate section of this manual.

Front View



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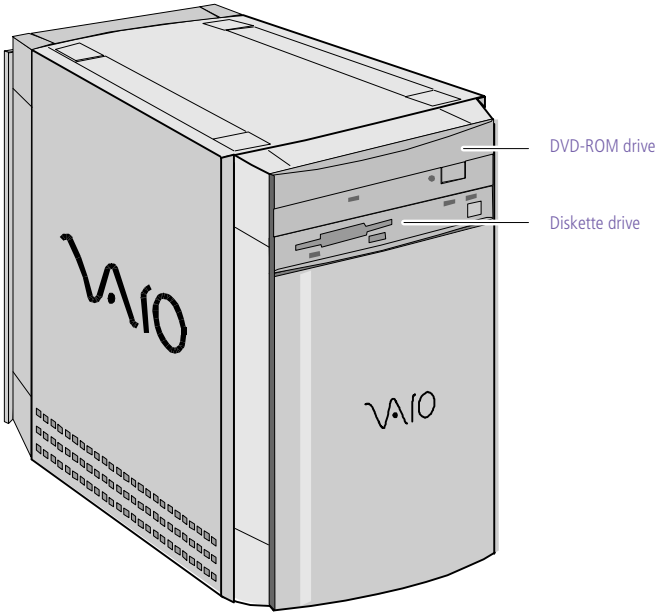
Drives



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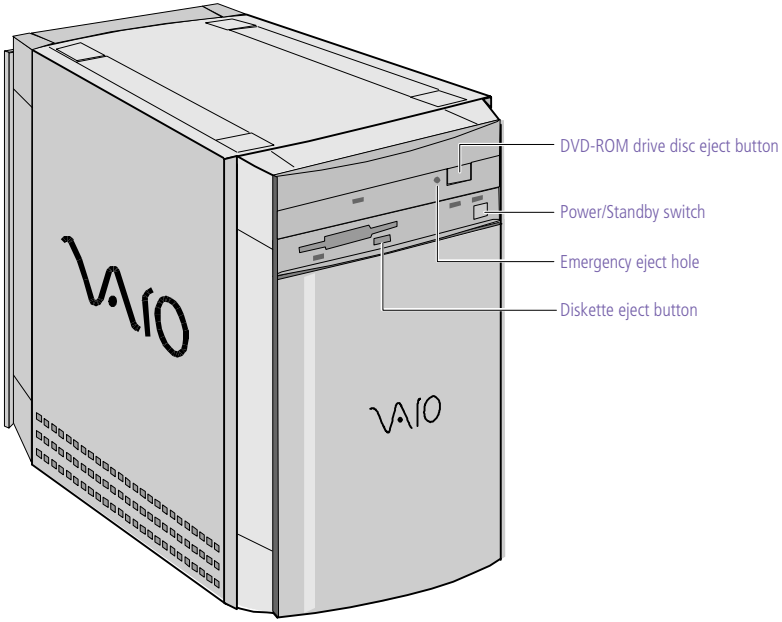
Drive	Description
Diskette drive	3.5-inch, 1.44 Mbyte.
DVD-ROM drive	DVD-ROM disc: 5X (maximum performance).* CD-ROM disc: 24X (maximum performance).*

* *DVD-ROM drive also plays CD-ROM discs. Data on the DVD-ROM is read at a variable transfer rate, ranging from 2X at the innermost track to 5X at the outermost track (the data transfer standard 1X rate is 1385 kbytes/s). The average data transfer rate is either 3.3X (4616 kbytes/s) or 3.4X (4709 kbytes/s), depending on your specific system. Data on a CD-ROM disc is read at a variable transfer rate, ranging from 10X at the innermost track to 24X at the outermost track (the data transfer standard 1X rate is 150 kybtes/s). The average data transfer rate is 17X (2250 kbytes/s).*

Buttons and Switches



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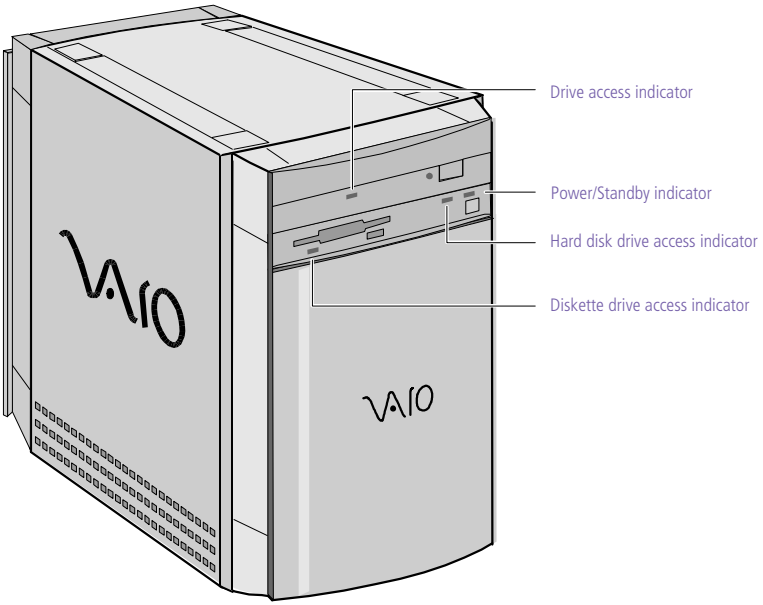
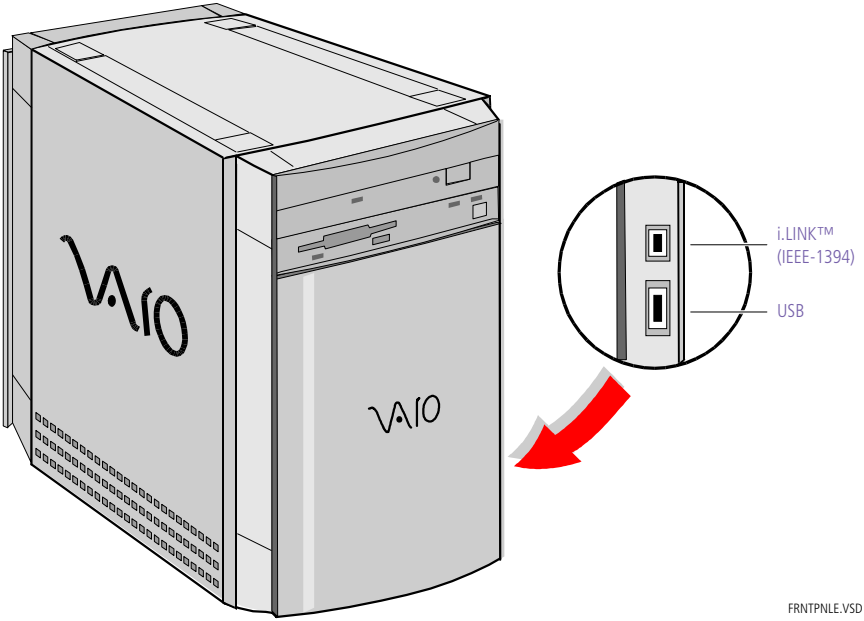
Button or switch	*Description*
Power/Standby switch	Turns system power on and off.
Diskette eject button	Ejects a diskette.
DVD-ROM disc eject button	Automatically opens and closes the DVD-ROM tray.
Emergency eject hole	Ejects a DVD-ROM disc or CD-ROM disc. (The location of the emergency eject hole may differ from the location indicated here.)

Indicators



Indicator	Description
Power/Standby indicator	Standby (amber) indicates the computer is in standby mode. On (green) indicates the computer is out of standby mode, ready to use. Off (no color) indicates the computer is turned off.
Diskette drive access indicator	On (green) indicates diskette drive activity.
DVD-ROM drive access indicator	On (orange) indicates DVD-ROM disc or CD-ROM activity.
Hard disk drive access indicator	On (orange) indicates hard disk drive activity.

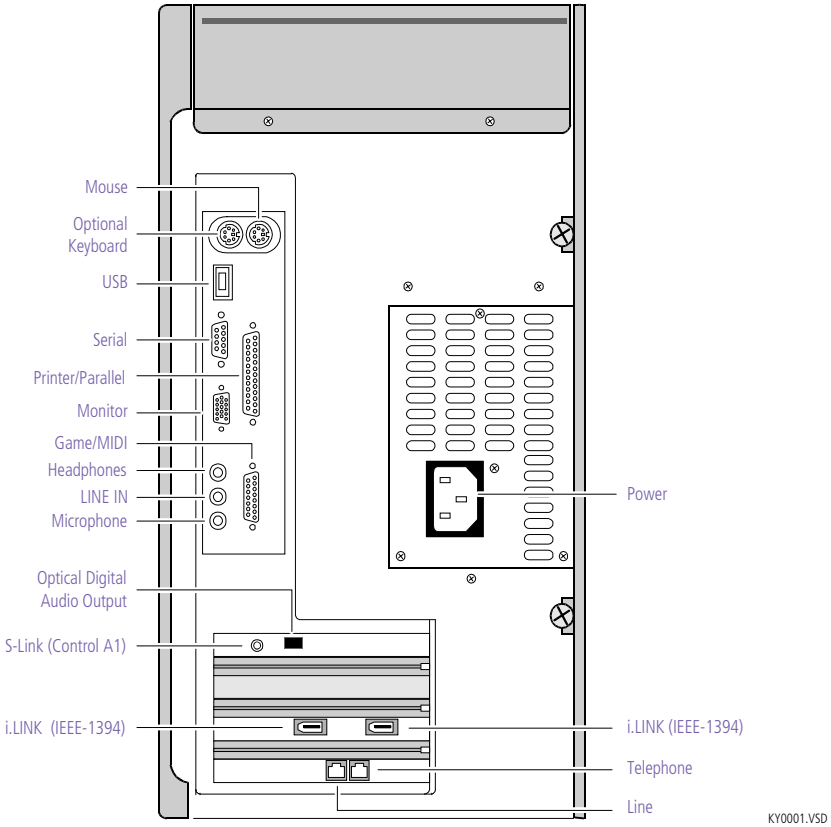
Connectors



Connector	Description
i.LINK (IEEE-1394)	*Connects to a digital device that has a 4-pin i.LINK connector.
USB	Connects to USB devices.

* *To connect to a 6-pin i.LINK device, use the i.LINK connector on the back of the system. A 6-pin i.LINK connector can supply power from the computer to the device if the device also has a 6-pin i.LINK connector. A 4-pin i.LINK connector cannot supply power to the device.*

Rear View


Mouse
Optional Keyboard
USB
Serial
Printer/Parallel
Monitor
Game/MIDI
Headphones
LINE IN
Microphone
Optical Digital Audio Output
S-Link (Control A1)
i.LINK (IEEE-1394)
Power
i.LINK (IEEE-1394)
Telephone
Line
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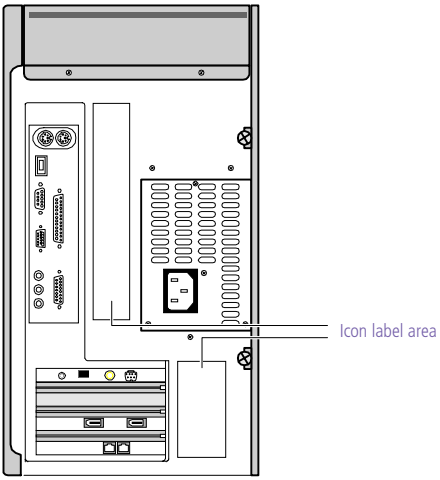
Icons



Icon	Description
	Mouse connector
	Optional Keyboard connector
	Universal Serial Bus (USB) connector
	Serial port connector
	Printer port connector
	Game/MIDI port connector
	Headphones
	LINE IN jack (audio)
	Microphone jack
	Monitor connector
	Line (for telephone line from primary service jack)

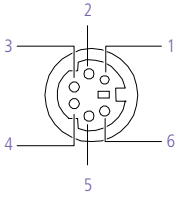
Icon	Description
	Telephone (for phone)
	Optical Digital Audio Output (AC-3)
	S-Link (Control A1)
	i.LINK (IEEE-1394)

I/O Connectors

The following section identifies the various I/O connectors.

Keyboard and Mouse

The keyboard and mouse connectors are physically identical and have the same pinout. They are standard 6-pin PS/2®-type female connectors.



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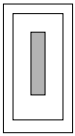
USB Port



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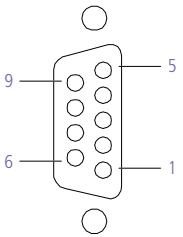
Serial Port

The serial port is a standard 9-pin DB-9 male connector.



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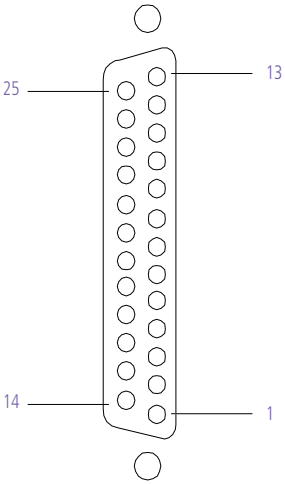
Printer Port

The printer port is a standard 25-pin DB-25 female connector.



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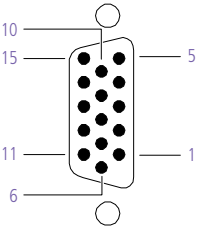
Monitor

The Monitor connector is a standard 15-pin female high-density VGA-type connector.



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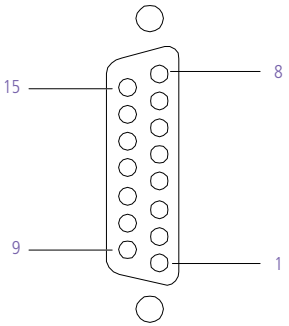
Game Port

The Game port is a standard 15-pin DB-15 female connector. This port is also used to connect MIDI devices.



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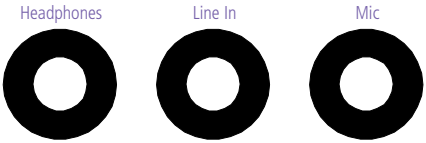
Mic, Line In, and Headphones

The Mic, Line In, and Headphones jacks are physically identical, but have different connections. They are standard 3.5 mm stereo mini-jacks.



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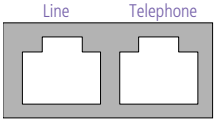
Connector	Description
Headphones	1.0 Vrms (typical)
Mic	Electrolet condenser microphone input
Line In	1.0 Vrms (typical), 10 Kohm impedance

Telephone and Line

The Telephone and Line jacks are physically identical and have identical connections. They are standard RJ-11 female phone jacks. However, the Line jack is for connecting to a telephone line that comes from the wall, and the Telephone jack is for connecting the computer to a telephone.



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Accidentally plugging a phone line from the wall into the modem's Telephone jack, and a telephone into the Line jack, will not damage the modem card or telephone equipment. However, the modem will not work correctly.

i.LINK™ (IEEE-1394) Connectors

The two i.LINK connectors on the back of the system can supply power from the computer to a device if the device also has a 6-pin i.LINK connector. Each connector supplies 10V to 12V. The total power supplied by both 6-pin i.LINK connectors cannot exceed 6 watts.

Optical Digital Audio Output Connector

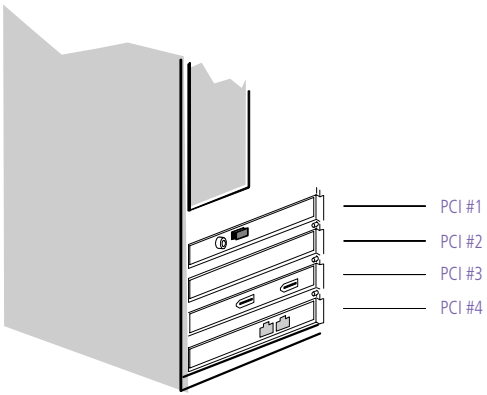
One optical digital audio output connector is available to connect to an audio device such as a DAT deck, minidisc player, or digital signal processor. The output provides an IEC 958-compliant data stream, a Dolby® Digital (AC-3®) audio stream, and a DVD movie audio-playback stream, depending on the type of device and the settings of the application software.

S-Link™ (Control A1) Connector

One S-Link (Control A1) connector is available to connect to audio devices such as a CD changer or minidisc player. You can control the connected device from your computer using the Audio/Video application in VAIO Space.

Expansion Slot

One PCI slot is available for expansion. The three other PCI slots are occupied by the fax/modem card, i.LINK (IEEE-1394) card, and Digital Audio Output card.



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Chapter 2
Configuring Your System

This chapter contains information on configuring your system. Configuring your system can consist of the following:

- Making changes to the BIOS settings
- Making changes to the display's power management settings
- Changing the system board jumper position

Accessing the BIOS Setup Utility

You must access the BIOS Setup Utility to make changes to the BIOS settings (see "BIOS Setup Options" on page 77 for information on BIOS settings).

! **Before rebooting the system, save any open files and exit Windows®.**

1. Reboot the system. The following message appears during the inital boot sequence:

   Press <F3> for Boot screen

2. Press F3. The following message appears.

   Press <F2> for setup.

3. Press F2.

   Each menu presents options for modifying the system configuration. Use the left and right arrow keys to select a menu from the menu bar. Use the up and down arrow keys to select items within a menu. Once an item is highlighted, use the plus/minus (+/-) keys to modify a setting.

   If an item has a triangle (▸) to its left, this indicates that a sub-menu of options is available. Press ENTER to access a sub-menu. If a sub-menu contains items with a triangle, there is another layer of options from which to select.

4. Once you select an option, press ESC to back out of each menu until you reach the top level, where the menu bar appears.

5. To exit the BIOS setup utility, press ESC from any top-level screen and follow the prompts.

Changing the Display's Power Management Settings

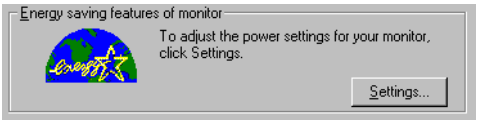
A display that has power management capability is designed to operate on reduced power or shut itself off after the system has been idle for a specified period of time.

1 From the **Start** menu, point to Settings, then click Control Panel.

2 Double-click the Display icon.

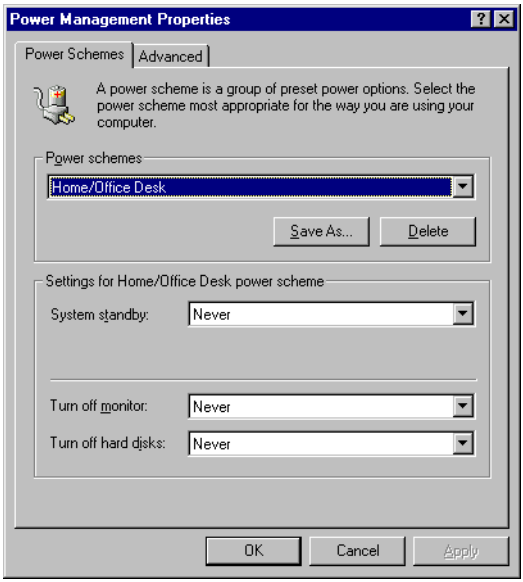
3 Click the Screen Saver tab.

If your display is Energy-Star compliant or has other energy-saving features, the Energy saving features of the monitor dialog box appear. Otherwise, the options in the dialog box are grayed out.



4 Click **Settings**.

The Power Management Properties dialog box opens, with the Power Schemes tab displayed.



5 Select the power scheme that is most appropriate for the way you use your computer.

To change a power scheme, change the settings for System standby, Turn off monitor, and Turn off hard disks.

The System standby option allows you to specify the period of inactivity (in minutes) that you want to elapse before your computer goes on standby when your computer is running on AC power. Power is reactivated when you move the mouse or press a key.

The Turn off monitor option allows you to specify the period of inactivity (in minutes) that you want to elapse before your monitor turns off when your computer is running on AC power. The display reactivates when you move the mouse or press a key.

The Turn off hard disks option allows you to specify the period of inactivity (in minutes) that you want to elapse before your hard disks turn off when your computer is running on AC power.

6 To save a new power scheme, first modify the settings, click Save As, type a descriptive name, and then click OK.

7 Click the Advanced tab.

8 Select the desired settings, and then click OK.

Configuring the System Board

The system board contains two configuration jumpers that provide three modes of operation: Normal mode, Clear CMOS mode, and BIOS Recovery mode.

Normal mode allows normal access to the BIOS Setup Utility. The Central Processing Unit (CPU) input clock is forced to remain at 100 MHz (fast mode), and the Basic Input/Output System (BIOS) uses the User CMOS settings (as opposed to the System CMOS settings). The CMOS and NVRAM settings are only cleared if the checksum test returns false. Access to specific setup fields is controlled by a supervisor password or user password.

The Clear CMOS mode removes the password that is stored in CMOS. No other parameters are cleared.

BIOS Recovery mode sets the CPU input clock to 100 MHz (fast mode) and attempts to perform a blind BIOS update.

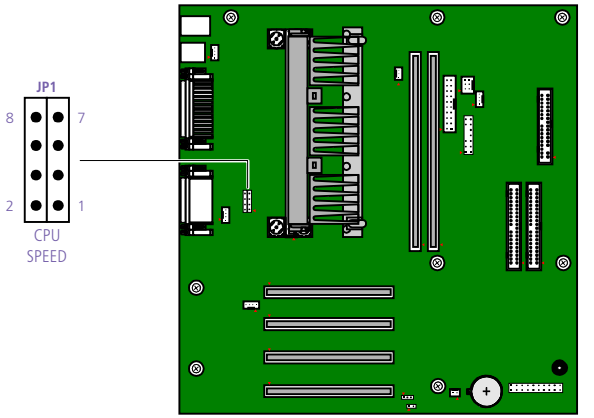
The configuration jumpers should never need changing unless otherwise directed by a technical support or service technician.

! **Before opening the system, save any open files, exit Windows, turn off the power of the computer and all attached peripherals, and unplug the power cord.**

1 Remove the side panel (see "Removing the Left Side Panel" on page 24).

2 Remove the bottom panel (see "Removing the Bottom Panel" on page 25).

3 Set the jumpers as directed by a service technician (also see "Configuration Jumpers" on page 68).



4 Reinstall the bottom panel (see "Removing the Bottom Panel" on page 25).

5 Reinstall the side panel (see "Replacing the Left Side Panel" on page 29).

Chapter 3
Removing, Installing, and Replacing Components

This chapter describes removing, installing, and replacing major components for upgrading, reconfiguring, and troubleshooting the components.

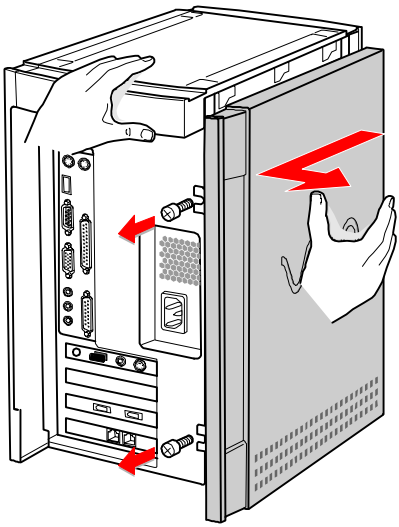
! **Before opening the system unit, save any open files, exit Windows, turn off the power of the computer and all attached peripherals, and then unplug the power cord.**

Removing the Left Side Panel

You must remove the left side panel to access the system board, add-in cards, power supply, battery, and internal drives.

1 From the rear of the unit, remove the two thumb screws that secure the panel to the chassis.

2 Slide the left side panel back with your right hand as you hold the chassis in position with your left hand. The panel slides back about ½ inch.



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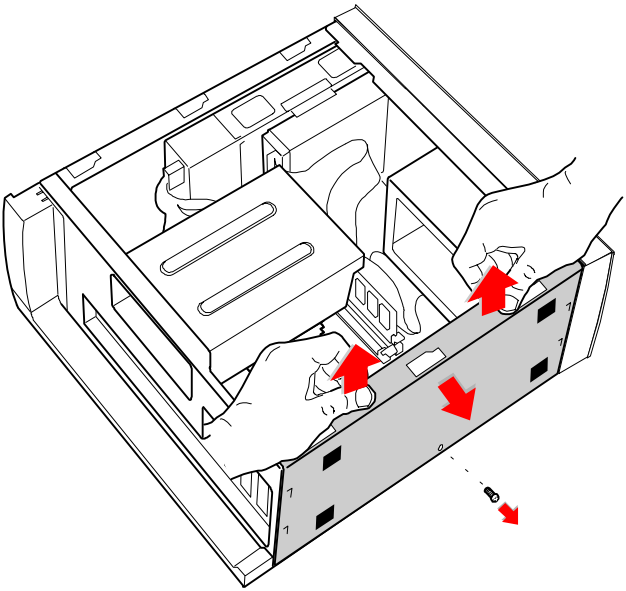
3 Pull the panel straight out to remove it.

Removing the Bottom Panel

You must remove the bottom panel to access internal components.

1 Remove the left side panel (see "Removing the Left Side Panel" on page 24).

2 Remove the screw that secures the bottom panel to the chassis.



KY0065.VSD

3 Pull up on the bottom panel until it stops. The panel moves up about ½ inch.

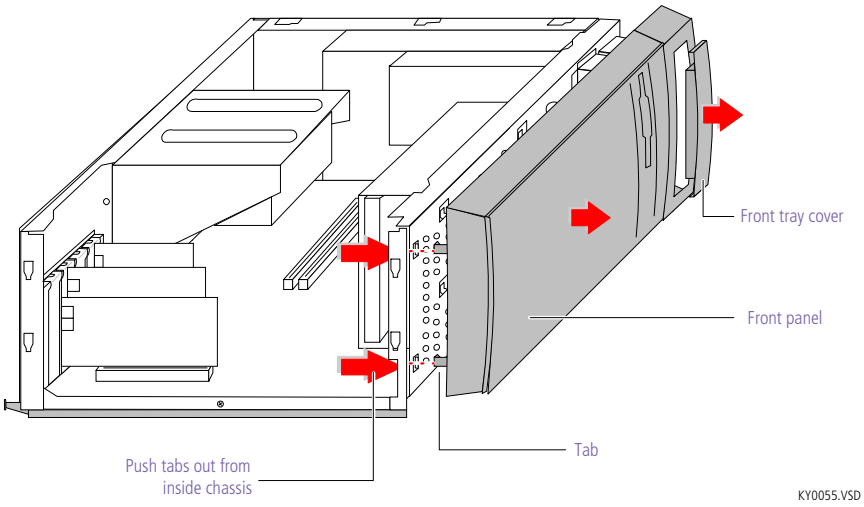
4 Pull the panel straight out to remove it.

Removing the Front Panel

You must remove the front panel to install system memory, which requires pulling the diskette drive out about two inches.

Follow steps 1 to 3 in the sequence shown to prevent damage to the front tray cover.

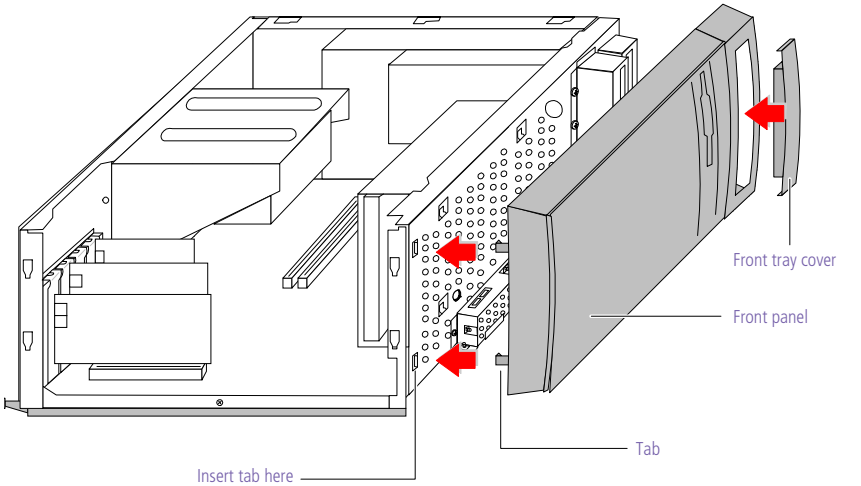
1. Insert a straightened paper clip into the emergency eject hole to open the tray.
2. Pull the tray out to its normal opened position.
3. Lift up on the front tray cover to remove it.
4. Push the tray back in.
5. Remove the bottom panel (see "Removing the Bottom Panel" on page 25) to access the two plastic tabs on the bottom of the front panel.
6. Push down and out on the two plastic tabs from inside the bottom of the chassis to release the bottom end of the front panel.



7. Pull out the top end of the front panel to remove it.

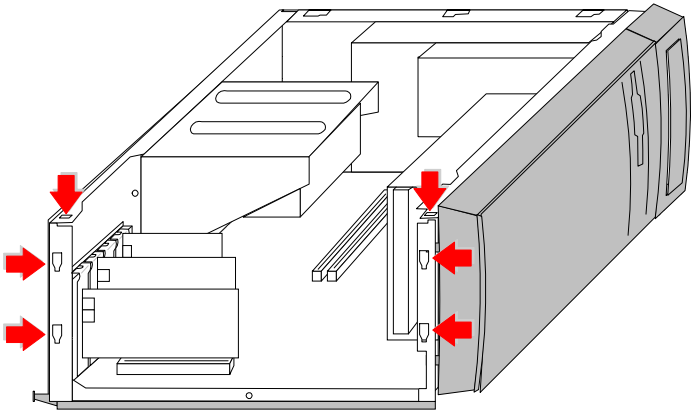
Replacing the Front Panel

1. Insert the two plastic tabs (located on the bottom of the front panel) into the slots at the bottom of the chassis.
2. Push the bottom of the front panel in until the tabs snap into place.
3. Push the top of the front panel until it is flush with the chassis.
4. Insert a straightened paper clip into the emergency eject hole to open the tray.
5. Pull the tray out to its normal opened position.
6. Carefully slide the tray cover down onto the CD-/DVD-ROM tray, then slide the tray in.



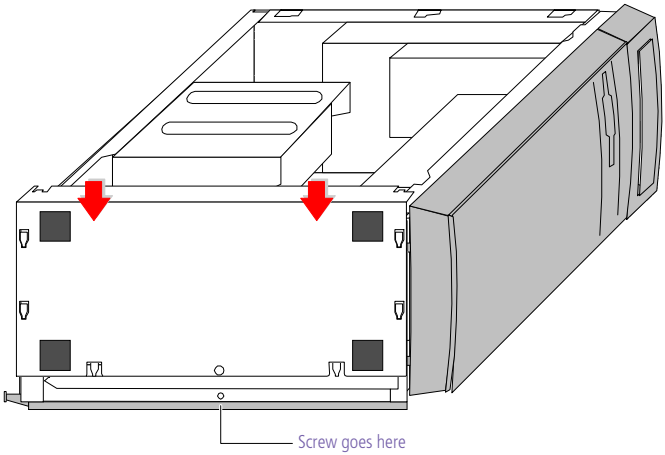
Replacing the Bottom Panel

1 Lay the chassis down with the open side facing up and the bottom end facing you. The arrows show the location of the slots.



KY0078.VSD

2 Position the bottom panel up against the bottom of the chassis, with the top of the panel about ½ inch higher than the chassis.



KY0079.VSD

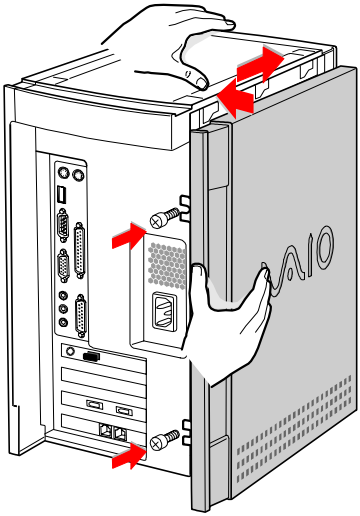
3 Slide the bottom panel down until the panel's tabs slide into the chassis's slots. Push down firmly until the screw hole in the chassis aligns with the screw hole in the panel.

4 Replace the screw (removed earlier) to secure the bottom of the panel to the chassis.

Replacing the Left Side Panel

1 Position the left side panel against the side of the unit, with the left side panel offset from the rear of the unit by about ¼ to ½ inch.

2 Hold the unit in position with your left hand as you slide the left side panel forward with your right hand until the panel snaps into place.



KY0067.VSD

3 Insert the two thumbscrews (removed earlier) to secure the panel.

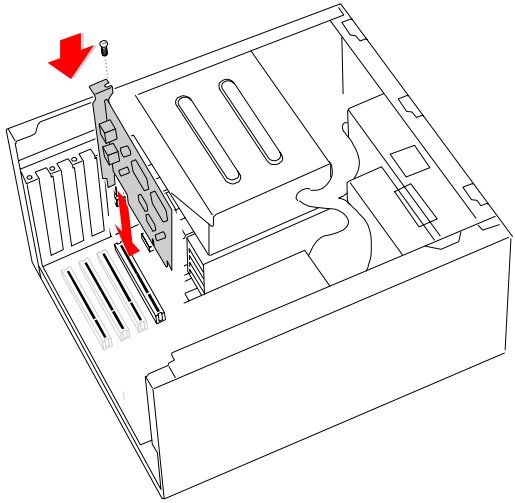
Installing an Add-In Card

! **Before opening the system unit, save any open files, exit Windows, turn off the power of the computer and all attached peripherals, and then unplug the power cord.**

1 Remove the slot cover adjacent to the selected slot connector on the system board (see "Removing a Slot Cover" on page 42).

2 Insert the add-in card into the PCI slot connector. Use a gentle rocking motion, pressing down until the card is fully seated.

Align the card's bracket so that the bottom of the bracket fits into the slot at the bottom of the chassis. Assure that the top of the bracket fits snugly against the chassis lip after the card is fully inserted.



KY0070.VSD

3 Attach any necessary cables to the card (see the instructions that came with the add-in card).

4 Replace the bottom panel (see "Replacing the Bottom Panel" on page 28).

5 Replace the left side panel (see "Replacing the Left Side Panel" on page 29).

6 Turn on the computer and follow any instructions that came with the add-in card.

Removing an Add-in Card

! **Before opening the system unit, save any open files, exit Windows, turn off the power of the computer and all attached peripherals, and then unplug the power cord.**

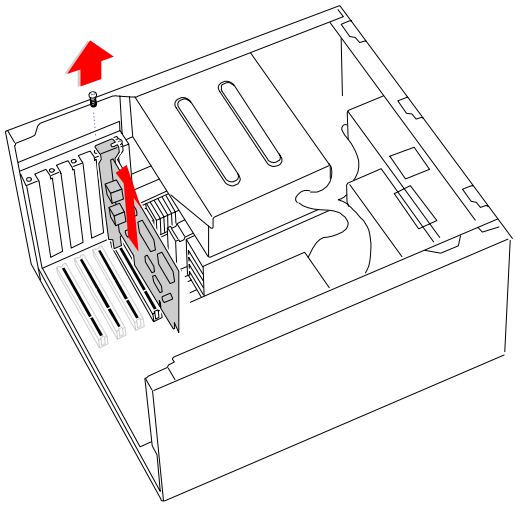
1 Remove the left side panel (see "Removing the Left Side Panel" on page 24).

2 Remove the bottom panel (see "Removing the Bottom Panel" on page 25).

3 Disconnect any cables attached to the add-in card.

4 Remove the screw that secures the add-in card to the chassis.

5 Remove the add-in card from the PCI slot connector and store the card in an anti-static wrapper for future use.



KY0071.VSD

Grasp the card with one hand on each end, and gently pull up as you rock the card from side to side.

! **Hold the add-in card by its edges and do not touch any components or connector contacts on the card. Static electricity in your body may damage sensitive components on the card. As a precaution, touch any exposed metal part on the metal chassis (preferably the metal part on the power supply) before handling an add-in card to discharge any static electricity in your body.**

6 If you do not replace the card or install another add-in card, install a slot cover over the vacant slot at the rear of the chassis (see "Covering an Open I/O Slot" on page 43).

7 Replace the bottom panel (see "Replacing the Bottom Panel" on page 28).

8 Replace the left side panel (see "Replacing the Left Side Panel" on page 29).

Replacing the Lithium Battery

You may need to replace the lithium battery if your computer consistently loses the date or time settings after turning it off. The lithium battery has a typical life of three years, after which the battery may be too weak to power the CMOS memory.

! **When you remove the lithium battery, all values stored in the CMOS memory (BIOS setup values and Plug and Play values) may be lost. Although the computer can hold the charge for a short time while replacing the battery, it is safer to assume that the settings will be lost. When the values are lost, the BIOS values revert to their factory-default settings (see "Accessing the BIOS Setup Utility" on page 18).**

Do not handle damaged or leaking batteries.

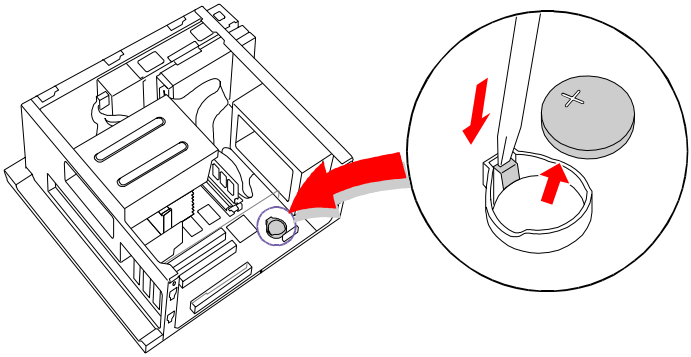
The lithium battery may explode if mistreated. Do not disassemble it or dispose of it in fire.

1. Reboot your computer by selecting Shut Down... from the Start menu, and then selecting Restart the computer.
2. If the error message "Error: Check date and time settings"appears during the reboot sequence, press F3, then press F2 during the reboot process to access the BIOS Setup Utility. Otherwise it is not necessary to replace the battery at this time, and you can skip all remaining steps.
3. Compare all the BIOS options to their default settings (see "BIOS Setup Options" on page 77). Make a list of all the BIOS options that are different from their default values. You will refer to this list when you restore the BIOS settings later.
4. Press ESC, then select Exit from the main menu using the right arrow key. The Exit Discarding Changes is automatically selected (it is the first item in the list).
5. Press Enter, type N when prompted to save, then press Enter to exit the BIOS Setup Utility.
6. Turn off the computer and unplug the power cord.
7. Remove the left side panel (see "Removing the Left Side Panel" on page 24).
8. Remove the bottom panel (see "Removing the Bottom Panel" on page 25).

9 If necessary, remove any add-in cards (see "Removing an Add-in Card" on page 31) to gain access to the battery. You may also need to disconnect some cables.

! **Touch any exposed metal part of chassis to discharge static electricity in your body before handling an add-in card or other sensitive electronic component.**

10 Insert a small flathead screwdriver into the small space at the top of the battery holder.



KY0072.VSD

11 Gently pry the battery out and dispose of it according to the instructions that came with the new battery.

12 Insert the new battery into the battery holder, with the plus (+) side up.

The Sony CR2032 battery is recommended. Using a type of battery other than a CR2032 may present a risk of fire or explosion.

13 Replace any add-in cards that were removed.

14 Reconnect any cables that were disconnected.

15 Replace the bottom panel (see "Replacing the Bottom Panel" on page 28).

16 Replace the left side panel (see "Replacing the Left Side Panel" on page 29).

17 Reconnect the power cord and turn on the computer.

18 If the error message "Error: Check date and time settings." appears during the reboot sequence, press F3, then press F2 to access the BIOS Setup Utility. If no error message displays, the computer's BIOS settings were retained during the battery replacement and you can skip the remaining steps.

19 Refer to the list you made in step 3 and restore any non-default BIOS settings (see "BIOS Setup Options" on page 77).

20 Press ESC, then select Exit from the main menu using the right arrow key.

21 Select Exit Saving Changes using the down arrow key, then press Enter to save the changes and exit the BIOS Setup Utility.

The computer's BIOS settings are now restored.

Installing System Memory

! **Before opening the system unit, save any open files, exit Windows, turn off the power of the computer and all attached peripherals, and then unplug the power cord.**

1 If necessary, remove the memory module you wish to replace (see "Removing a Memory Module" on page 39).

2 Remove the new memory module(s) from its anti-static package. Hold the memory module only by its edges to prevent static-electricity damage.

3 Choose the size of the memory module and configuration as shown in the following table. Memory modules can vary in size and speed between sockets. The minimum memory size is 8 MB; the maximum memory size is 256 MB. The BIOS automatically detects the type, size and speed of the memory modules.

Memory module configurations (MB)*

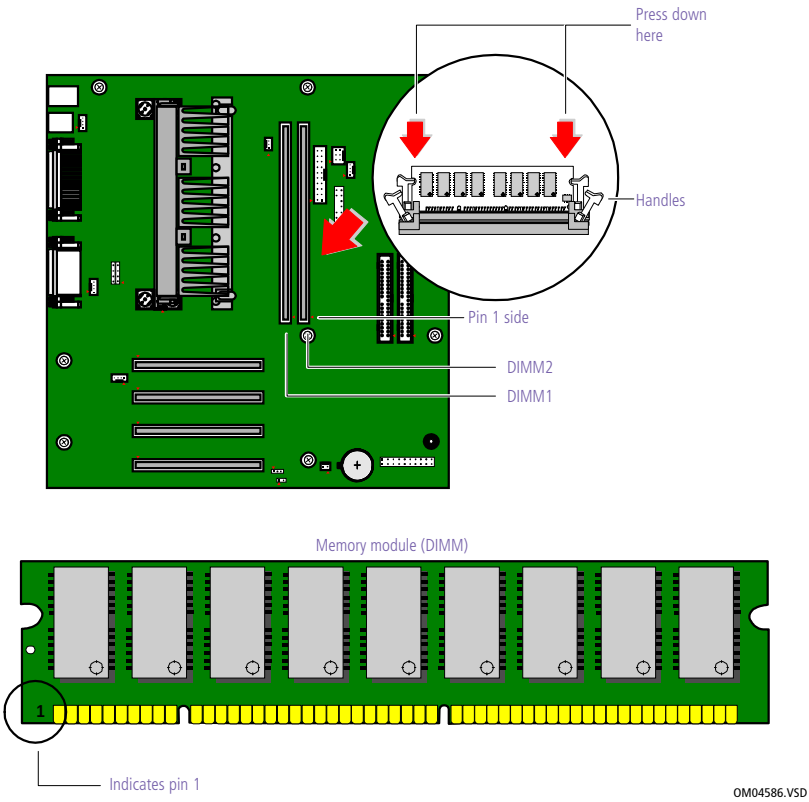
DIMM1	*DIMM2*
0, 8, 16, 32, 64, 128	0, 8, 16, 32, 64, 128

* *The PCV-E314DS is shipped with 64 MB. SDRAM is expandable to 256 MB.*

! **Touch any exposed metal part of the chassis to discharge static electricity in your body before handling a memory module.**

Use only 100 MHz FSB-supported memory. Do not mix 66 MHz memory with 100 MHz memory. Supports SDRAM memory. Does not support EDO memory or buffered DIMM memory.

4 Align the module over the appropriate socket, noting the location of pin 1 on the module and pin 1 on the socket.



5 Carefully but firmly insert the edge of the module into the socket.

6 Press down firmly and evenly at both corners until the module is fully seated.

When the module is fully seated, the handles on each side are straight up and locked into the slot on each side of the module. If the handles are not totally straight upright, continue to press down on each side of the module until the handles lock into place.

7 Replace any add-in cards and other components that were removed.

8 Replace the bottom panel (see "Replacing the Bottom Panel" on page 28).

9 Replace the front panel (see "Replacing the Front Panel" on page 27).

10 Replace the left side panel (see "Replacing the Left Side Panel" on page 29).

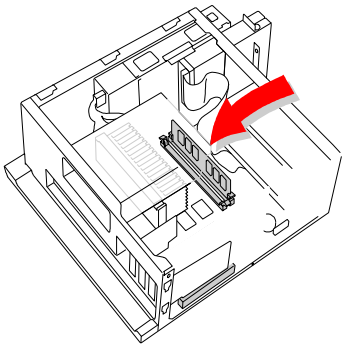
Your computer automatically recognizes the extra memory and will configure itself accordingly when you turn it on. No further action is required.

Removing a Memory Module

You may need to remove a memory module if you change the memory configuration or replace a bad module.

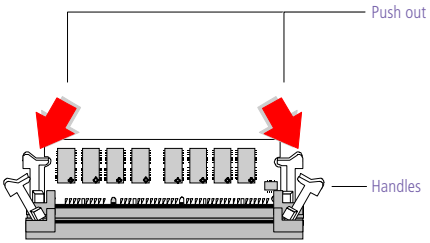
! **Before opening the system unit, save any open files, exit Windows, turn off the power of the computer and all attached peripherals, and then unplug the power cord.**

1. Remove the left side panel (see "Removing the Left Side Panel" on page 24).
2. Remove the bottom panel (see "Removing the Bottom Panel" on page 25).
3. Remove the front panel (see "Removing the Front Panel" on page 26).
4. Slide the diskette drive out approximately two inches (see "Detaching the Diskette Drive" on page 41).
5. Remove any add-in cards (see "Removing an Add-in Card" on page 31) and other components as needed to access the memory modules.
6. Locate the memory module you wish to remove.



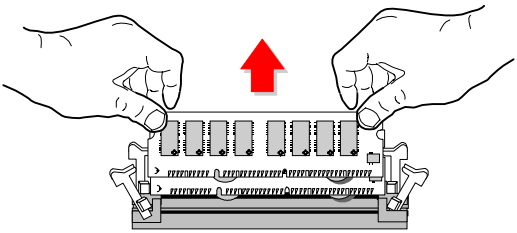
KY0073.VSD

7 Push out the handle on each side of the memory module to eject the module from its socket.



KY0042.VSD

8 Lift the memory module out by grasping it by its edges. Store the module in a static-free bag.



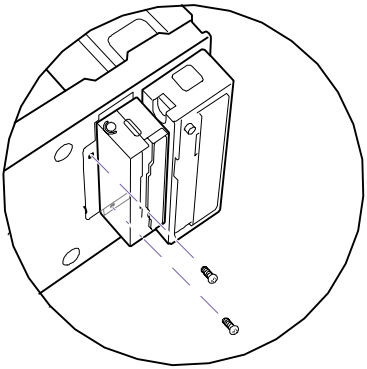
KY0043.VSD

! **Touch any exposed metal part of the chassis to discharge static electricity in your body before handling the memory module.**

Detaching the Diskette Drive

You need to detach the diskette drive and pull it out approximately two inches to access the system memory.

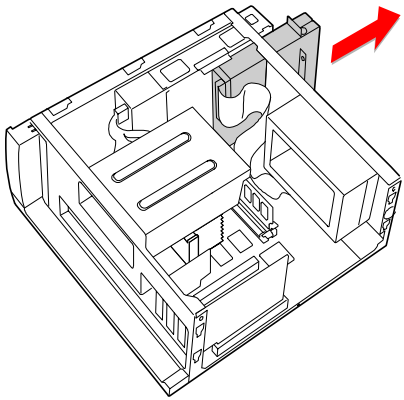
1 Remove the two screws that secure the diskette drive carrier to the chassis.



KY0074.VSD

2 Slide the diskette drive carrier out approximately two inches (enough to provide access to the memory modules).

> Be careful not to hook the plastic LED and power-switch cover when sliding the diskette drive in or out. The metal tab on the diskette drive may come close to the plastic cover. If the plastic cover is accidentally removed, reattach it by inserting the plastic tabs into the slots in the chassis.



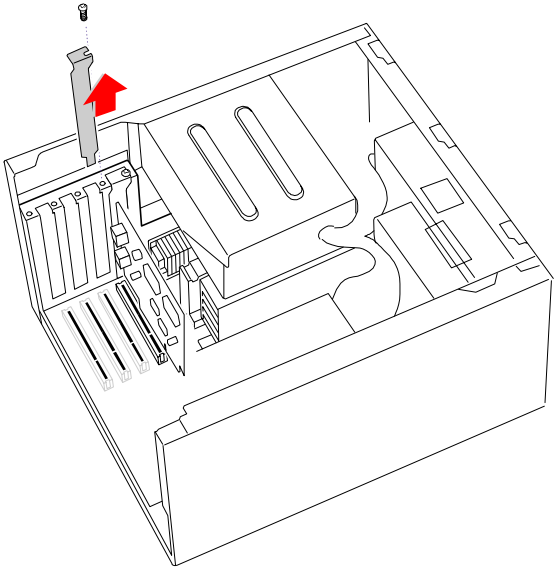
KY0075.VSD

3 Unplug the flat ribbon cable and power connector (P4), as needed.

Removing a Slot Cover

You remove a slot cover when you install an add-in card that occupies a previously-empty slot.

1. Locate the slot of the cover you want to remove.
2. Remove the left side panel (see "Removing the Left Side Panel" on page 24).
3. Lay the system on its side with the open side facing up.
4. Carefully remove the screw from the slot cover.
5. Carefully remove the loose slot cover and retain it for future use.

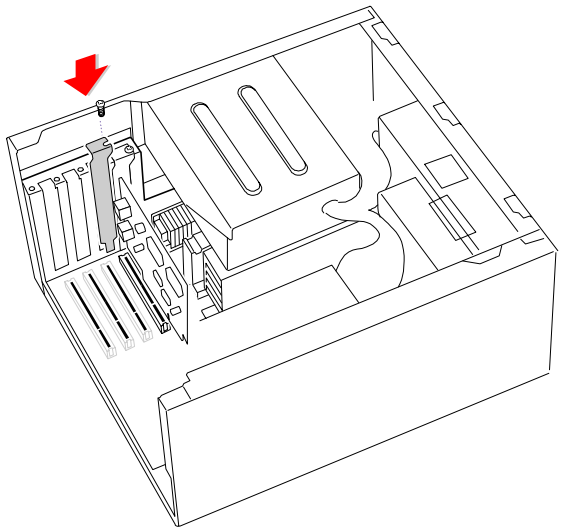


KY0069.VSD

Covering an Open I/O Slot

Slot covers prevent air from escaping through the empty hole. If air escapes, the components inside the computer cannot be properly cooled. This may damage some components, especially the main processor (which generates the most heat).

1 Fit the tip of the slot cover (removed earlier) between the chassis and system board.



KY0076.VSD

2 Push the slot cover down until it rests firmly on the lip in the chassis. All add-in card brackets and slot covers rest on this lip.

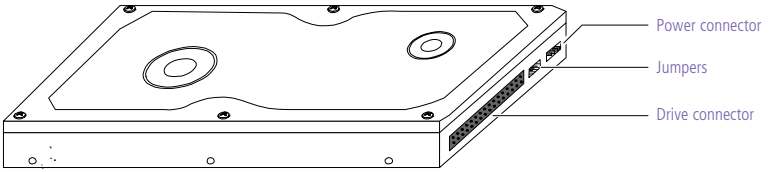
3 Replace the screw (removed earlier) to secure the I/O slot cover.

Installing an Internal Hard Disk Drive

Your system comes with an available bay to hold an additional hard disk drive. The drive you install must not require front panel access. The hard disk drive access light blinks when either internal drive is active.

! **Before opening the system unit, save any open files, exit Windows, turn off the power of the computer and all attached peripherals, and then unplug the power cord.**

1 Configure the jumpers on the new drive as a secondary master (see your drive's documentation for configuration instructions).



KY0084.VSD

2 Remove the left side panel (see "Removing the Left Side Panel" on page 24).

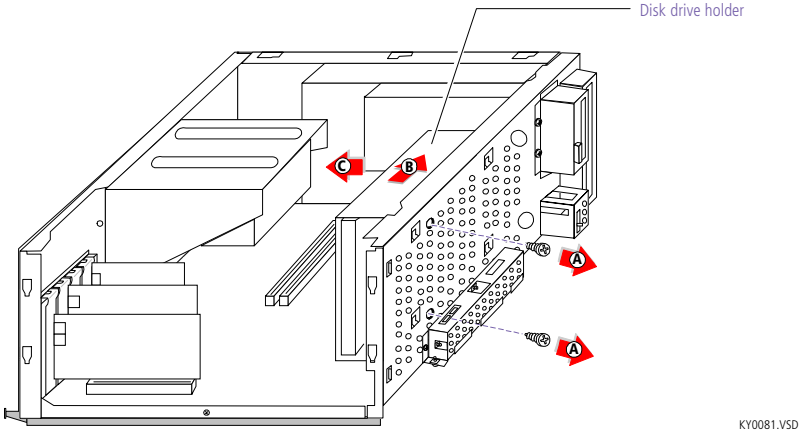
3 Remove the front panel (see "Removing the Front Panel" on page 26).

4 Remove the bottom panel (see "Removing the Bottom Panel" on page 25).

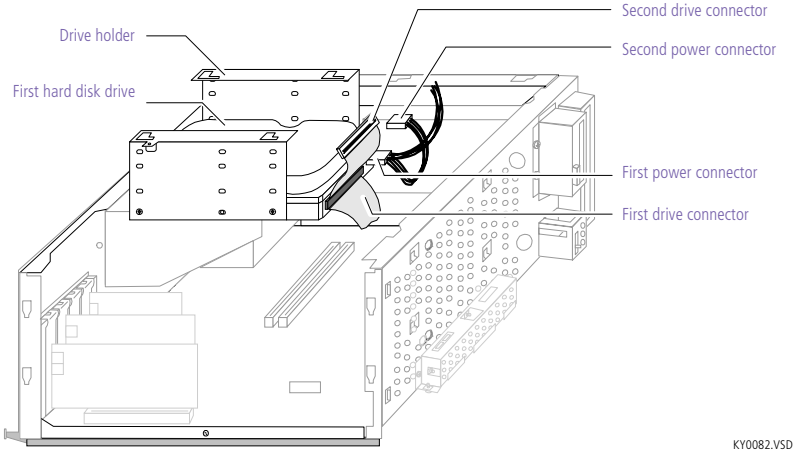
5 Lay the system on its right side (left side faces up — see diagram that follows).

6 Remove the two screws (A) that secure the drive holder.

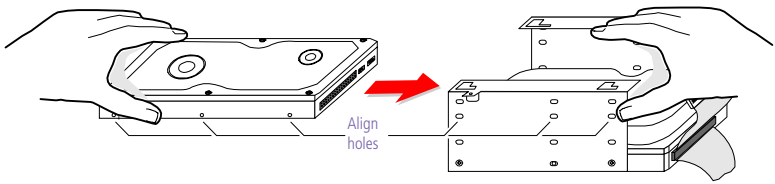
7 Slide the drive holder forward (B), and then out (C).



8 Place the drive holder upside down on top of the power supply.



9 Slide the new drive into the drive holder and align the holes on each side of the drive holder.

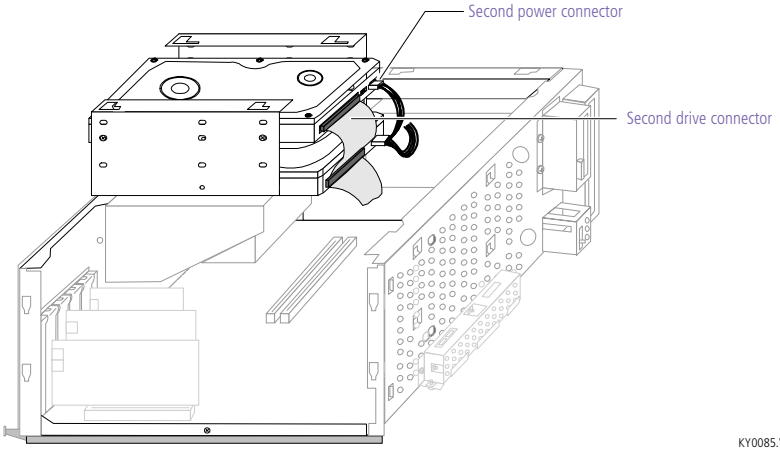


KY0083.VSD

10 Secure the drive to the drive holder using any two of the three holes on each side of the drive holder (screws are provided with the new drive). Do not overtighten the screws.

11 Connect the second drive connector to the new drive.

12 Connect the second power connector to the new drive.

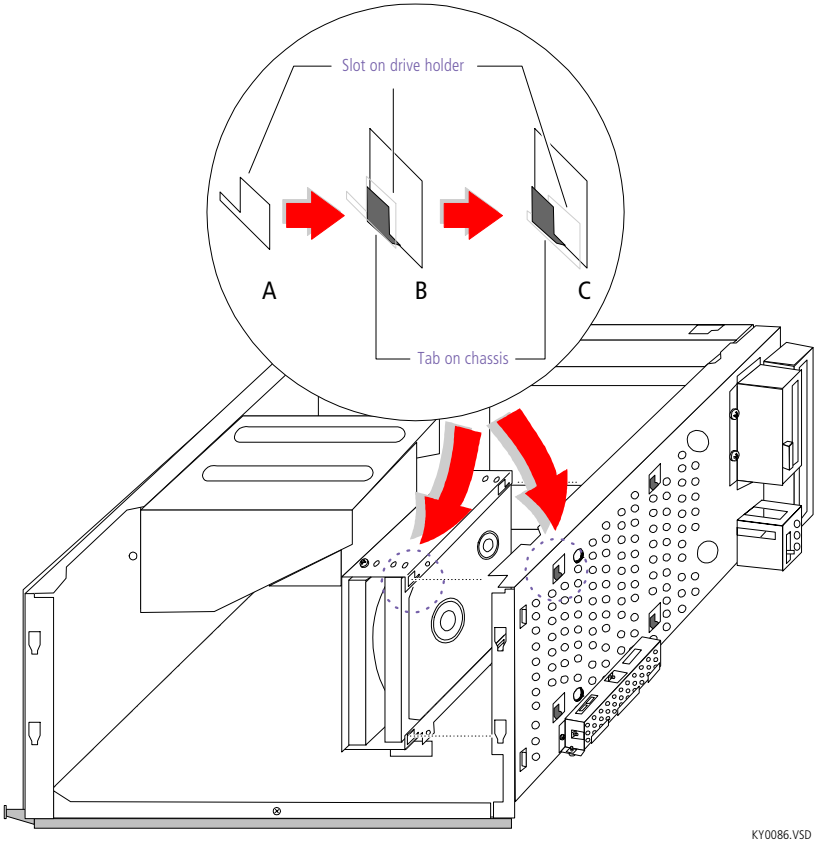


KY0085.VSD

13 Make sure the drive cable is connected securely to the motherboard.

14 Place the drive holder against the inside of the front chassis and slide the drive holder back. Be sure to align the slots (A) on the drive holder with the tabs (B) on the inside of the chassis. Be sure to slide

the drive holder back so that the tabs slip into the notches at the bottom of the slot (C).



15 Replace the two screws that secure the drive holder to the chassis.

16 Replace the bottom panel (see "Replacing the Bottom Panel" on page 28).

17 Replace the front panel (see "Replacing the Front Panel" on page 27).

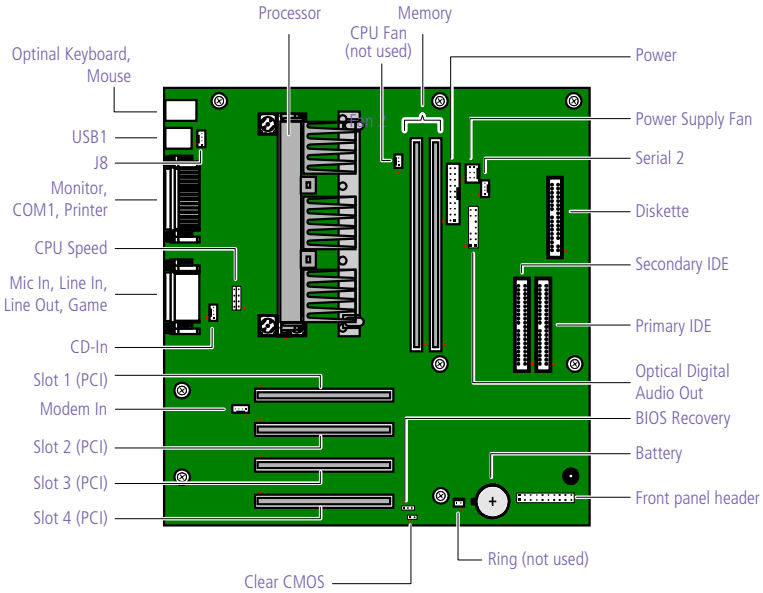
18 Replace the left side panel (see "Replacing the Left Side Panel" on page 29).

19 Reconnect the power cord and then turn on your computer.

Your computer automatically recognizes the new drive and configures itself accordingly when you turn it on. Format and partition the new drive following the instructions provided with the drive.

Chapter 4
System Board

This chapter identifies each component on the system board and provides a detailed description of each connector and jumper on the system board.

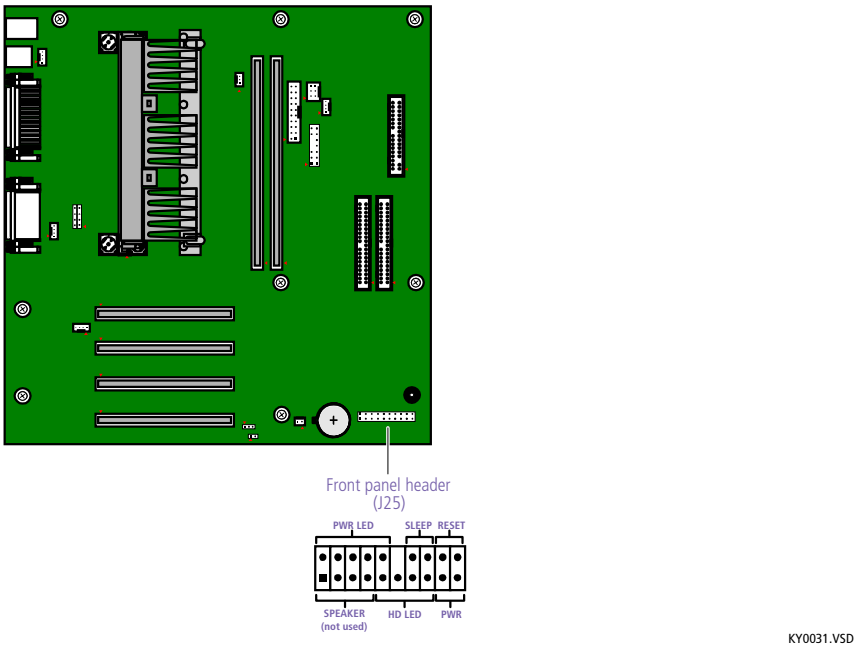


OM04581.VSD

Connectors

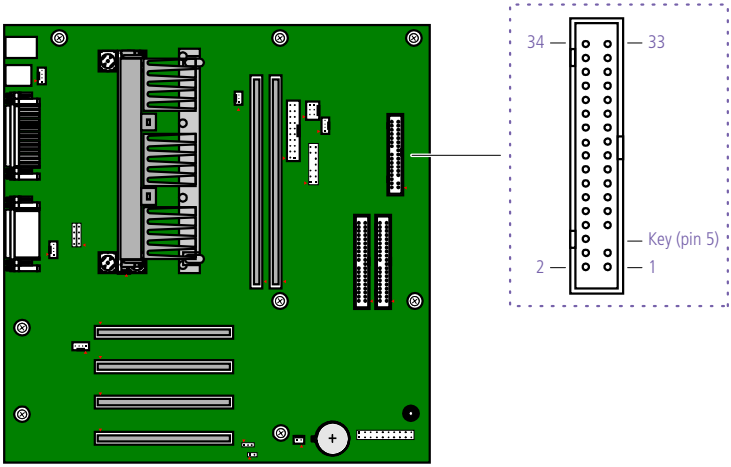
Front Panel Header (J25)

The front panel header is a 20-pin header (1 pin is removed for the key) that provide connections to various front panel functions. A 20-pin connector with only eight wires is used to interface the system board to the front panel.



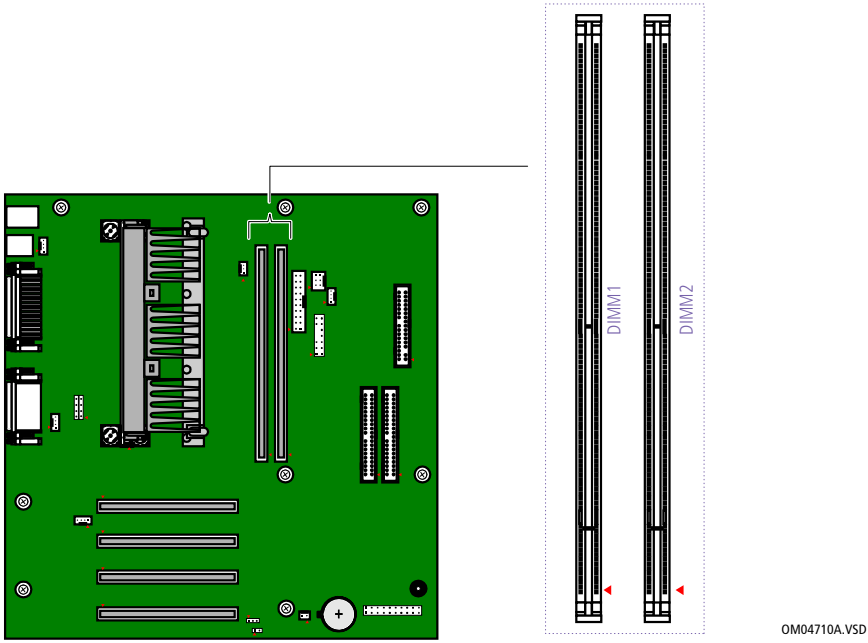
Name	Description
SPEAKER	(not used)
PWR LED	Connects to the power-on indicator light on the front panel
HD LED	Connects to the hard disk drive access light on the front panel
SLEEP	(not used)
PWR	Connects to the power-on switch on the front panel
RESET	(not used)

Diskette Drive Connector

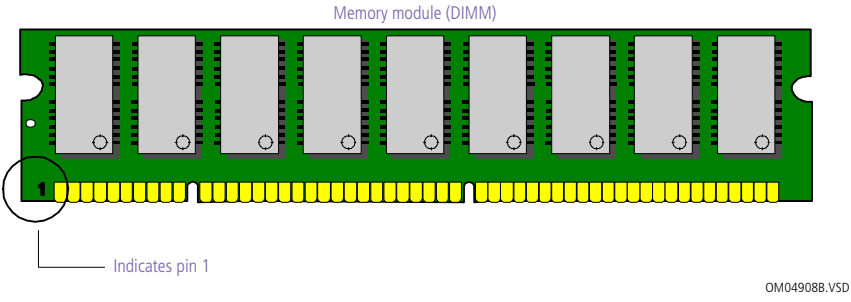


OM04701H.VSD

Memory Module (DIMM) Connectors

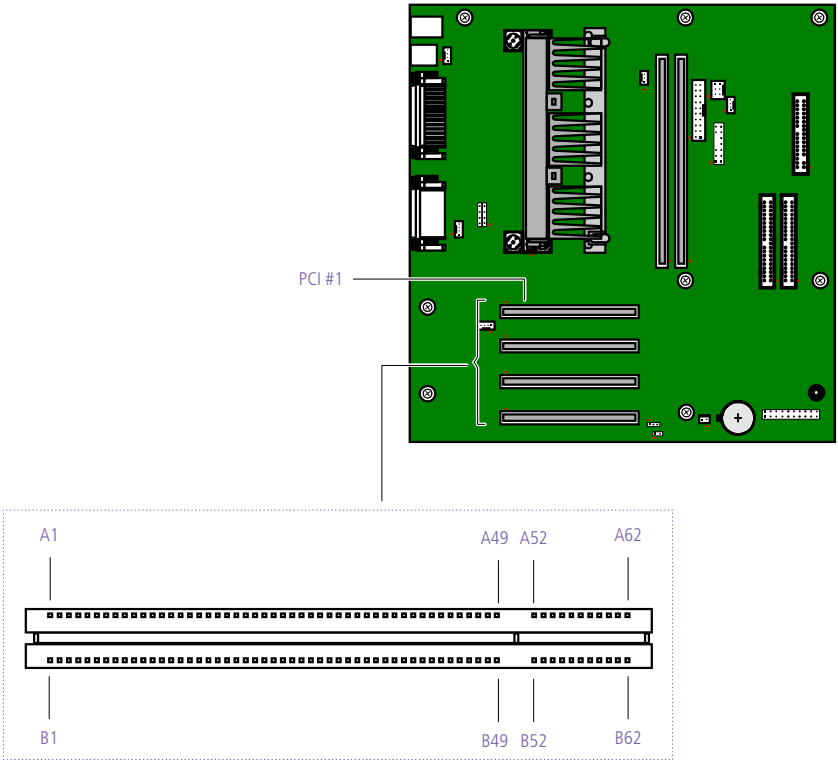


Both sides of each Dual Inline Memory Module (DIMM) look very similar. The side with pin 1 has a small "1" to the left of pin 1. Be sure to orient a DIMM correctly in the DIMM connector (a small triangle on the connector indicates pin 1).



PCI Slot Connectors

There are a total of four PCI slot connectors (slot #1 to #4). One PCI slot connector (#2) is available for a PCI card. The PCI slots support 32-bit 5V and Universal (3.3/5V) PCI add-in cards.

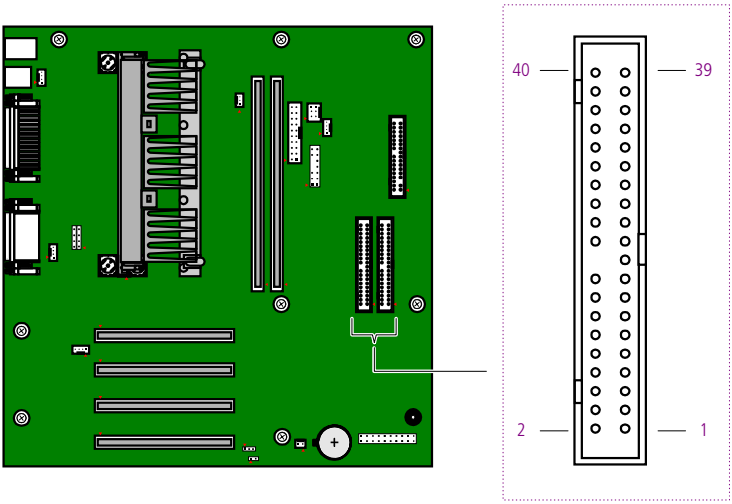


OM04599B.VSD

IDE Connectors

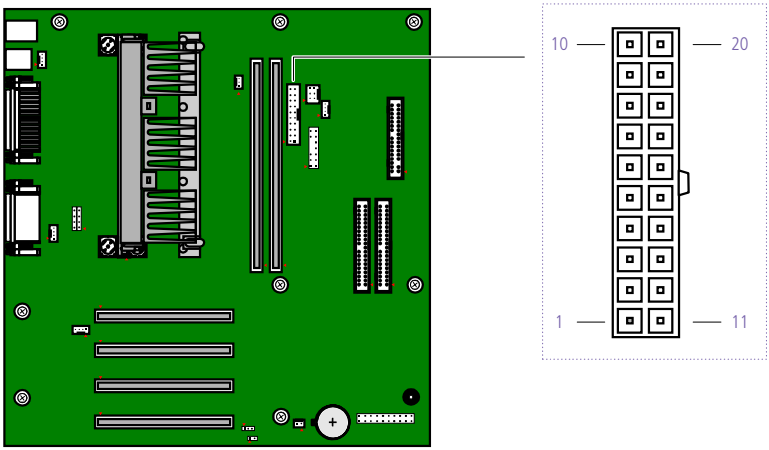
There are two IDE (Integrated Drive Electronics) connectors on the system board: a Primary IDE and a Secondary IDE connector.

Each IDE connector supports up to two IDE drives using a ribbon cable with two connectors.



Power Connector

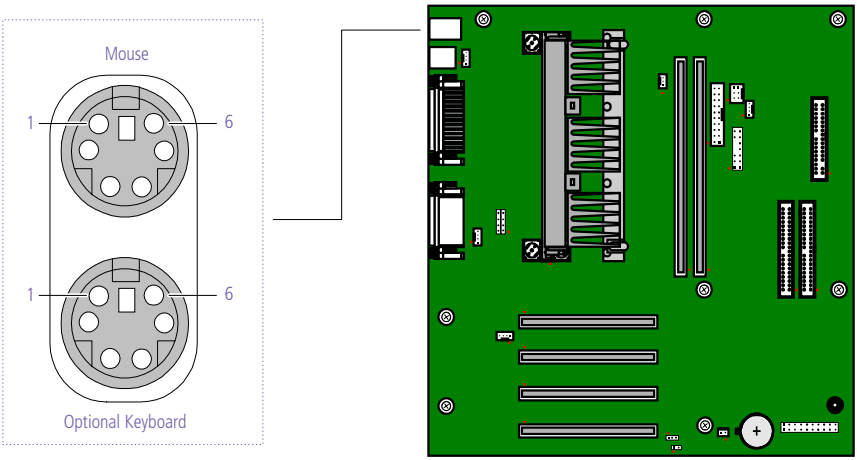
The power supply connector on the system board connects to the power supply connector labelled P1.



OM04701I.VSD

Keyboard and Mouse Connectors

The keyboard connector and the mouse connector are 6-pin female PS/2-type (mini-DIN) connectors. They have identical pinouts.



KY0032.VSD

Keyboard and Mouse

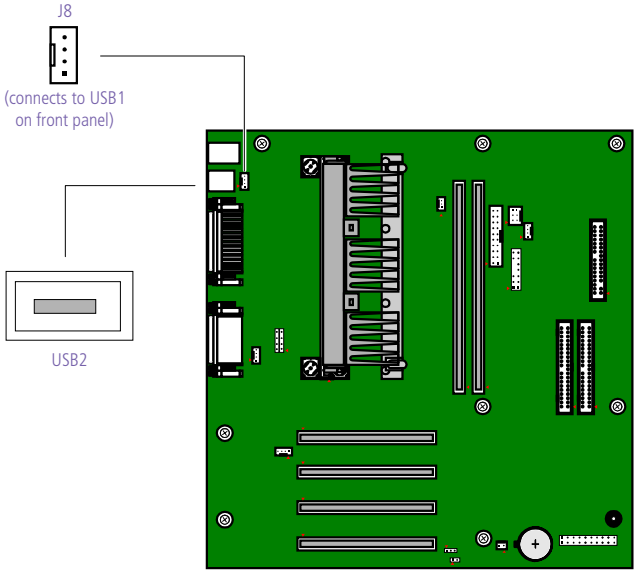
Pin	*Signal Name*
1	DATA
2	NC
3	LOGIC GND
4	+5V (fused)
5	CLOCK
6	NC

USB Connectors

There are two USB ports that permit connection of two USB peripheral devices directly to the system without having to use an external hub.

USB2 is a standard USB connector accessible from the rear panel. USB1 is a standard USB connector accessible from the right side of the front panel. An internal cable connects USB1 to a 4-pin header connector (J8) on the system board.

If more USB devices are needed, connect an external hub to either USB1 or USB2.



J8 (connects to USB1 on front panel)

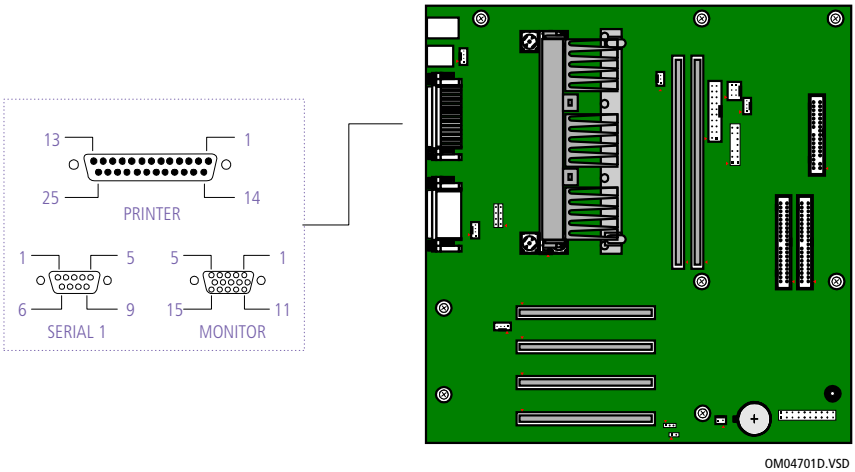
Pin	*Signal Name*
1	USBV1
2	USBP1+
3	USBP1–
4	USBGND

USB2

Pin	*Signal Name*
1	+5 V DC
2	SIGNAL –
3	SIGNAL +
4	GND

Serial 1, Printer, and Monitor Connectors

The Serial, Printer, and Monitor connectors are mounted in a single bracket on the system board. The Serial 1 connector is a DB-9 male connector. The Printer connector is a DB-25 female connector. The Monitor connector is a DB-15S female connector.



OM04701D.VSD

Serial 1 connector

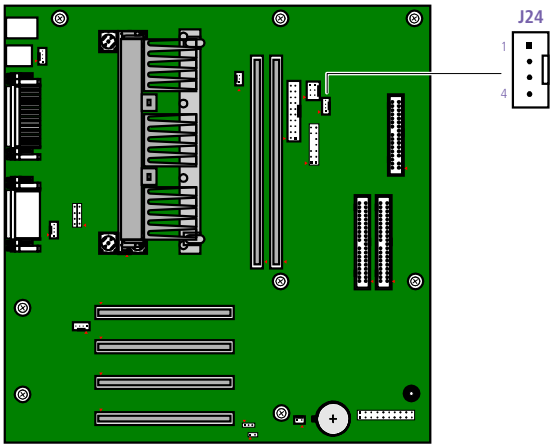
Pin	*Signal Name*
1	DCD
2	RXD
3	TXD
4	DTR
5	LOGIC GND
6	DSR
7	RTS
8	CTS
9	RI

Printer connector	
Pin	*Signal Name*
1	STROBE -
2	DATA BIT 0
3	DATA BIT 1
4	DATA BIT 2
5	DATA BIT 3
6	DATA BIT 4
7	DATA BIT 5
8	DATA BIT 6
9	DATA BIT 7
10	ACK -
11	BUSY
12	PE
13	SELECT
14	AUTO-FEED -
15	ERROR -
16	INIT -
17	SELECT-IN -
18	LOGIC GND
19	LOGIC GND
20	LOGIC GND
21	LOGIC GND
22	LOGIC GND
23	LOGIC GND
24	LOGIC GND
25	LOGIC GND

Monitor connector	
Pin	*Signal Name*
1	RED
2	GREEN
3	BLUE
4	NC
5	LOGIC GND
6	RED GND RTN
7	GREEN GND RTN
8	BLUE GND RTN
9	+5V PULL-UP
10	LOGIC GND
11	NC
12	DDC DAT
13	HORIZONTAL SYNC
14	VERTICAL SYNC
15	DDC CLK

Serial 2 Connector

The Serial 2 connector (J24) is a 4-pin header connector mounted on the system board.

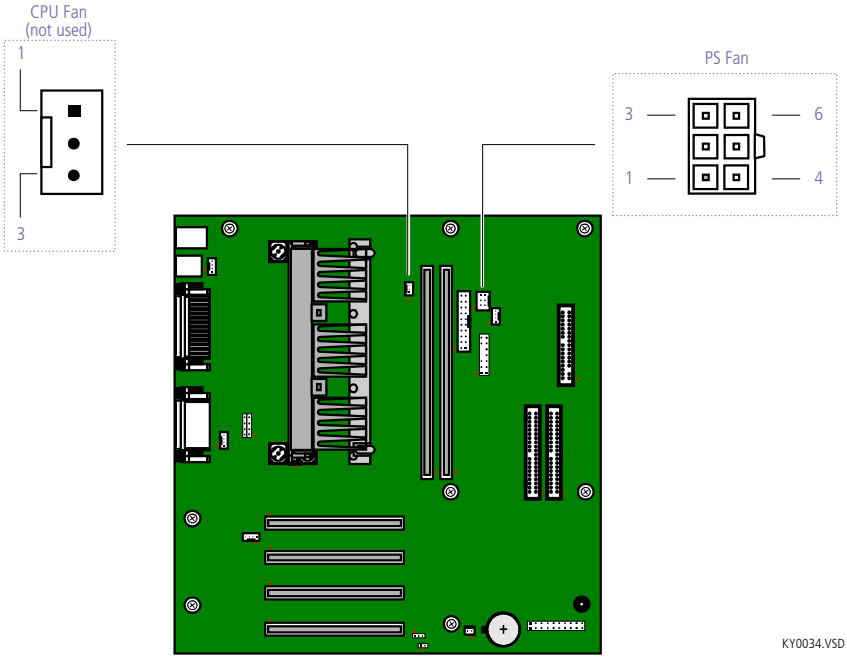


Serial 2 connector

Pin	*Signal Name*
1	TXD
2	RXD
3	GND
4	CTS

Fan Connectors

The CPU-Fan connector is a 1 x 3-pin straight header connector. PS-Fan is a 2 x 3-pin connector that controls the cooling fan in the power supply.

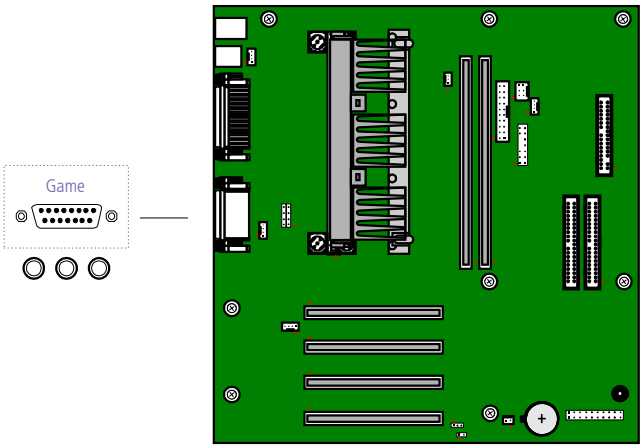


CPU Fan Connector	
Pin	*Signal Name*
1	LOGIC GND
2	+12 VDC (FAN PWR ON)
3	FANTACH3

PS Fan Connector	
Pin	*Signal Name*
1	Reserved
2	Fan On/Off
3	Reserved
4-6	Reserved

Game Connector

The Game connector is a female DB-15 connector for connecting to a game controller/joystick or MIDI device.

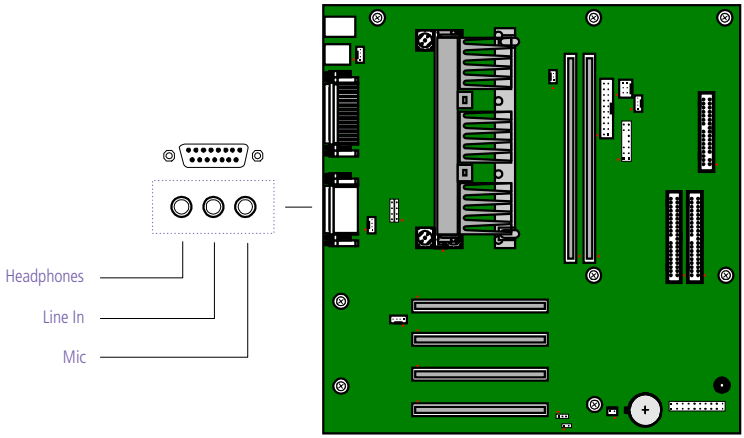


KY0056.VSD

Game Connector	
Pin	*Signal Name*
1	+5 VDC (fused)
2	GP4 (JSBUTO)
3	GP0 (JSX1R)
4	Ground
5	Ground
6	GP1 (JSY1R)
7	GP5 (JSBUT1)
8	+5 VDC (fused)
9	+5 VDC (fused)
10	GP6 (JSBUT2)
11	GP2 (JSX2R)
12	MIDI-OUTR
13	GP3 (JSY2R)
14	GP7 (JSBUT3)
15	MIDI-INR

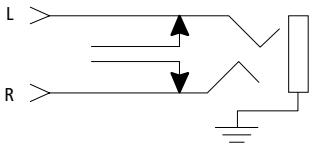
Headphones, Line In, Mic Connectors

The Headphones jack is a stereo mini-jack (3.5 mm) that connects to headphones. The Line In jack is a stereo mini-jack (3.5 mm) that connects to a stereo audio source (not an audio source from a video device). The Mic In jack is a stereo mini-jack (3.5 mm) that connects to a microphone.



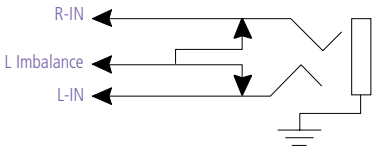
KY0058.VSD

Headphones



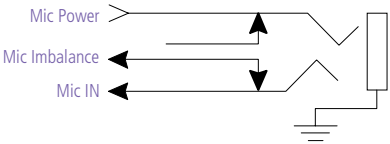
OM04713.VSD

Line In



OM04713B.VSD

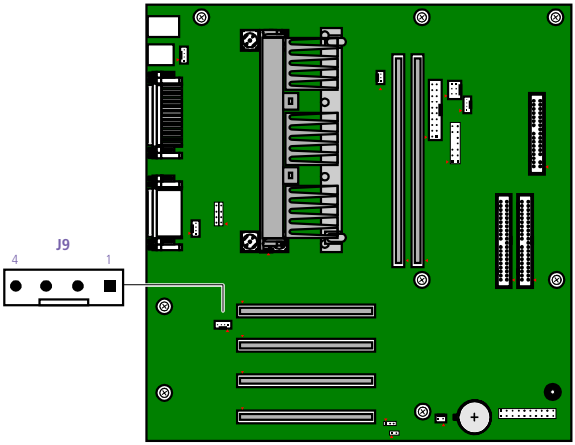
Mic



OM04713A.VSD

Modem In Connector

The Modem In connector (J9) on the system board is a 1 x 4-pin header connector and connects to the audio output connector (J4) on the fax/modem card.

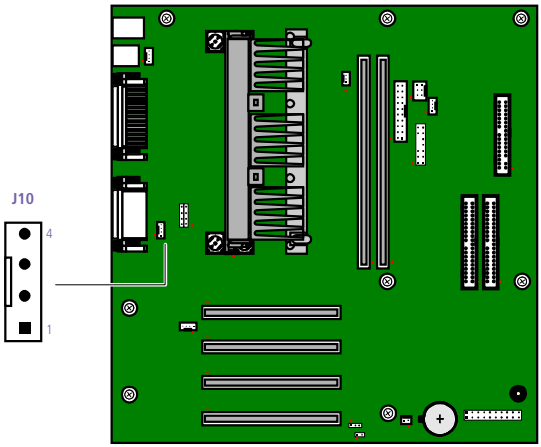


J9

Pin	*Signal Name*
1	GND
2	MONO_O (to modem chip)
3	GND
4	MONO_I (to sound chip)

CD In Connector

The CD In connector (J10) on the system board is a 1 x 4-pin header connector and connects to the DVD-ROM drive's audio output connector.

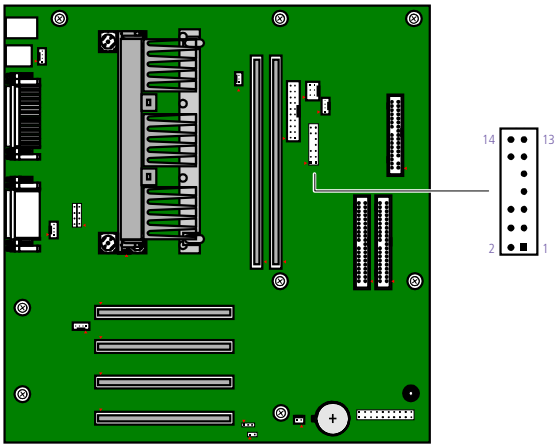


KY0062.VSD

J10	
Pin	*Signal Name*
1	LEFT
2	GND
3	GND
4	RIGHT

Optical Digital Audio Output Connector

The Optical Digital Audio Output connector (J23) on the system board is a 2 x 7-pin straight header connector and connects to CN301 on the Optical Digital Audio Output Paddle card.



KY0063.VSD

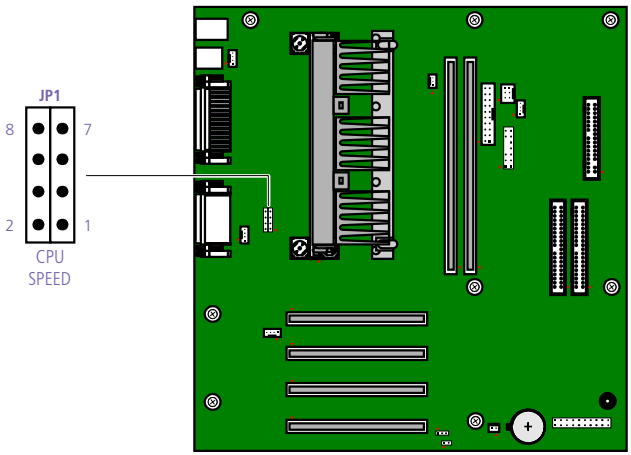
J23	
Pin	*Signal Name*
1	GND
2	NC
3	GND
4	NC
5	GND
6	NC
7	GND
8	RESERVED (key)
9	NC
10	NC (key)
11	DOUT
12	GND
13	RET (GND)
14	GND

Configuration Jumpers

The configuration jumpers provide for CPU speed (JP1), password clear (JP4), and BIOS recovery (JP2) selections.

CPU Speed

The processor speed jumper (JP1) is a 2 x 4 header that is preconfigured for the maximum speed, as shown in the following table.



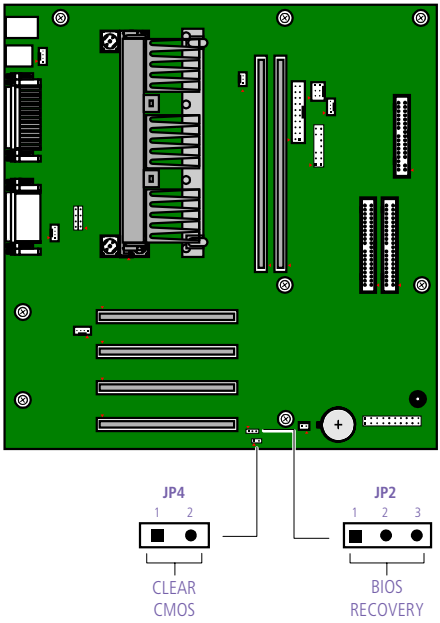
OM04588.VSD

JP1

CPU Clock Speed	Pins 1 - 2	Pins 3 - 4	Pins 5 - 6	Pins 7 - 8
300 MHz	ON	OFF	ON	ON
350 MHz	ON	OFF	ON	OFF
400 MHz	OFF	ON	ON	ON
450 MHz	OFF	ON	ON	OFF
500 MHz	OFF	OFF	ON	ON

BIOS Recovery and Clear CMOS

The computer is shipped with an unused jumper cap on pins 2 and 3 (pin 3 is floating) for use by service personnel only. The jumper cap should remain in this inactive position unless otherwise directed by a technical support person.



JP2

Jumper Cap	*Description*
1 - 2	BIOS recovery mode
2 - 3	Normal mode

JP4

Jumper Cap	*Description*
On	CMOS clear mode
Off	Normal mode

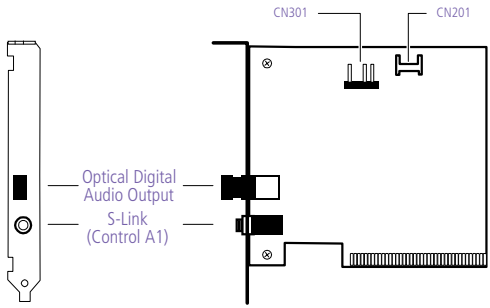
Chapter 5
Optical Digital Audio Output Paddle Card

The Optical Digital Audio Output paddle card is installed in PCI slot #1. A cable connects between CN301 on the Optical Digital Audio Output paddle card and J23 on the system board.

An Optical Digital Audio Output connector provides the ability to connect an audio device such as a DAT deck, minidisc player, or digital signal processor (DSP) if the device is also equipped with an Optical Digital Audio Output connector.

A cable connects between CN201 on the Optical Digital Audio Output paddle card and J24 on the system board.

An S-Link (Control A1) connector provides the ability to connect an audio device such as a CD changer or minidisc player if the device is also equipped with an S-Link connector.



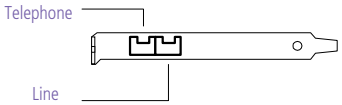
KY0035.VS

Connectors

Name	Connector Type	Description
Optical Digital Audio Output	Optical connector	Connects to the Digital Audio Output connector of a digital audio device
S-Link	Stereo connector (3.5 mm)	Connects to the Control A1 connector of a digital audio device

Chapter 6
Fax/Modem Card

The fax/modem card occupies PCI slot #4. There are two RJ-11 jacks: one to connect a telephone line, and one to connect a phone.



KY0038.VSD

Connectors

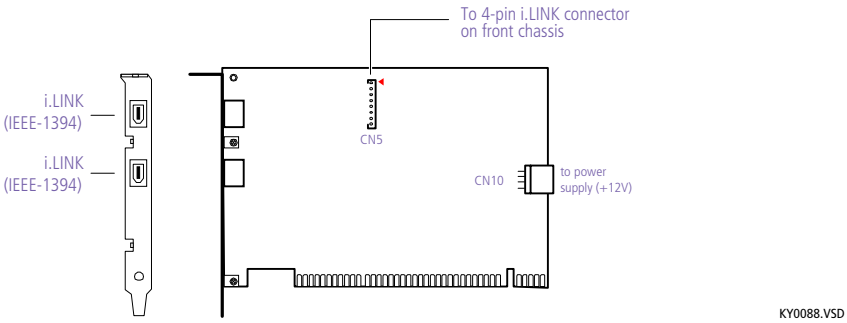
Name	Connector Type	Description
Telephone	RJ-11	Connects to phone
Line	RJ-11	Connects to telephone line

Chapter 7
i.LINK Card

The i.LINK (IEEE-1394) card provides two 6-pin i.LINK (IEEE-1394) connectors for devices that are also equipped with 6-pin i.LINK (IEEE-1394) connectors. The i.LINK (IEEE-1394) card occupies PCI slot #3.

The two 6-pin i.LINK (IEEE-1394) connectors on the card bracket are accessible from the back of the computer. Each 6-pin connector can supply power from the computer to a connected device if that device also has a 6-pin i.LINK (IEEE-1394) connector. Each connector supplies 10V to 12V. The total power supplied by both connectors cannot exceed 6 watts.

A cable connects the 8-pin header connector (CN5) on the i.LINK (IEEE-1394) card to an interface unit mounted behind the front panel cover. The interface unit provides the 4-pin i.LINK (IEEE-1394) connector at the bottom right side of the front chassis. A power supply cable connects to the 4-pin header connector (CN10).



Connectors

Name	Connector Type	Description
i.LINK (IEEE-1394)	6-pin i.LINK (IEEE-1394)	Connects to a device equipped with a 6-pin i.LINK connector
CN5	8-pin header	Connects to an internally-mounted interface device that provides the 4-pin i.LINK (IEEE-1394) connector that is accessible on the front right side of the chassis
CN10	4-pin header connector	Connects to power supply cable

Chapter 8
BIOS Setup Options

This chapter describes each screen in the PhoenixBIOS Setup Utility (see "Accessing the BIOS Setup Utility" on page 18).

The Phoenix BIOS setup has six menu items on the menu bar. These are:

- Main
- Advanced
- Security
- Power
- Boot
- Exit

Options that you can change are enclosed in brackets. Text that is not enclosed in brackets cannot be changed.

A small triangle (▸) indicates that there is a sub-menu with additional information and options. Press Enter to open the sub-menu. The information and options in a sub-menu are context-sensitive (they appear or disappear, depending on other selected options).

The item shown in [brackets] in this guide is the default option. The option shown in [brackets] on the screen is the current option. The available options are shown without brackets in this guide, directly below the default option. The available options are listed in the order they occur when you press the + key.

To change an option, use the left and right arrow keys to choose the menu item. Use the up and down arrow keys to select an option. Press Enter if the option is a sub-menu, or press the + or - key to cycle through the other options.

Press Esc to go back to the main menu. Press F10 to save the changes and exit, or press Esc to discard the changes. Follow the on-screen prompts for other choices. The bottom of the screen presents a summary of the keys to use for navigation and control.

Main Screen

System Time:	[00:00:00]
System Date:	[01/01/1988]
Language:	[English (US)]
BIOS Version:	6.0.2W
Legacy Diskette A:	[1.44/1.25 MB 3½″] 2.88 MB 3½″ Disabled 360 KB 5¼″ 1.2 MB 5¼″ 720 KB 3½″
Legacy Diskette B:	[Disabled] 360 KB 5¼″ 1.2 MB 5¼″ 720 KB 3½″ 1.44/1.25 MB 3½″ 2.88 MB 3½″

▸Primary Master Secondary Master	[Example: Maxtor 91020D6-(PM)]
Type: (Note: Set Type to AUTO for correct settings)	[AUTO] NONE CD-ROM ATAPI Removable IDE Removable USER
CHS Format	
Cylinders*:	[Example: 16383]
Heads*:	[Example: 16]
Sectors*:	[Example: 63]
LBA Format	
Total Sectors*:	[Example: 19923120]
Maximum Capacity*:	Example: 10201 MB
Multi-Sector Transfers†:	[Example: 16 Sectors] Enabled 2 Sectors 4 Sectors 8 Sectors
LBA Mode Control†:	[Enabled] Disabled
32 Bit I/O‡:	[Enabled] Disabled
Transfer Mode†:	[Fast PIO 4] FPIO 3/DMA 1 FPIO 4/DMA 2 Standard Fast PIO 1 Fast PIO 2 Fast PIO 3
Ultra DMA Mode†:	[Mode 2] Disabled Mode 0 Mode 1

* This option appears when Type is set to User.

† This option appears when Type is set to Auto or User, but is only editable when Type is set to User.

‡ This option appears when Type is not set to None.

Advanced Screen

Installed O/S:	[Win98] Other Win95
Boot-time Diagnostic Screen:	[Disabled] Enabled
Reset Configuration Data:	[No] Yes
Legacy USB Support:	[Enabled] Disabled

- PCI Configuration
  - PCI Device, Slots #1 to #4

Option ROM Scan:	[Enabled] Disabled
Enable Master:	[Disabled] Enabled
Latency Timer:	[0040h] 0060h 0080h 00A0h 00C0h 00E0h Default 0020h

- I/O Device Configuration

Serial port A:	[Auto] Disabled Enabled
Base I/O address*:	[3F8] 2F8 3E8 2E8
Interrupt*:	[IRQ 4] IRQ 3
Serial port B:	[Auto] Disabled Enabled
Base I/O address†:	[3F8] 2F8 3E8 2E8
Interrupt*:	[IRQ 4] IRQ 3
Parallel port:	[Auto] Enabled Disabled
Mode‡:	[Bi-directional] EPP ECP Output only
Base I/O address**:	[378] 278 228
Interrupt**:	[IRQ 7] IRQ 5
Floppy disk controller:	[Enabled] Auto Disabled
Base I/O address:	[Primary] Secondary

* This option appears only if the port is set to Enabled.

† This option appears only if the port is set to Enabled.

‡ This option appears only if the port is set to Auto or Enabled.

** This option appears only if the port is set to Enabled and Mode is not set to EPP.

Large Disk Access Mode:	[DOS] Other
Local Bus IDE adapter:	[Both] Disabled Primary Secondary
Sound:	[Enabled] Disabled
▸Advanced Chipset Control	
Enable memory gap:	[Disabled] Conventional Extended

Security Screen

User Password Is:	Clear
Supervisor Password Is:	Clear
Set User Password	[Enter]
Set Supervisor Password	[Enter]
Password on boot:	[Disabled] Enabled

Power Screen

Power Savings:	[Disabled] Customized Maximum Power Savings Maximum Performance
Auto Suspend Timeout*:	[Off] 5 Minutes 10 Minutes 15 Minutes 20 Minutes 30 Minutes 40 Minutes 60 Minutes
Resume on Time:	[Off] On
Resume Time:	[00:00:00]
AC LOSS Control	[Disabled] Enabled

* This option is enabled only if Power Savings is set to Customized.

▸Advanced Options

IDE Drive 0 Monitoring:	[Enabled] Disabled
IDE Drive 1 Monitoring:	[Enabled] Disabled
IDE Drive 2 Monitoring:	[Disabled] Enabled
IDE Drive 3 Monitoring:	[Disabled] Enabled
Audio, Joystick	[Enabled] Disabled
Floppy Disk Drive	[Enabled] Disabled
Serial Port A	[Enabled] Disabled
Serial Port B or Modem	[Enabled] Disabled
Parallel Port	[Enabled] Disabled
Keyboard, Mouse, Video	[Enabled] Disabled
PCI Bus Monitoring	[Disabled] Enabled

Boot Screen

1.	[ATAPI CD-ROM Drive]
2.	[Removable Devices]
3.	[Hard Drive]

▸Hard Drive

1. [Example: Maxtor 91020D6-(PM)]
2. [Bootable Add-in Card]

▸Removable Devices

1. [Legacy Floppy Drives]

Floppy check:	[Enabled] Disabled

Exit Screen

Exit Saving Changes

Exit Discarding Changes

Load Setup Defaults

Discard Changes

Save Changes

Chapter 9
Miscellaneous Technical Information

This chapter contains information on the following subjects:

- User and Supervisor password
- Beep code error messages
- PCI configuration status and error messages
- DMA channel assignments
- IRQ assignments
- System I/O address map
- Memory map

About User and Supervisor Passwords

The system allows you to specify up to two passwords (a User password and a Supervisor password) in the BIOS Setup Utility. The User password is required; the Supervisor password is optional.

Access to the BIOS Setup Utility depends on which passwords were previously set, as indicated next.

If you set these passwords...	*...the following passwords are required:*
User password only	User password is required at bootup.
Supervisor password only	No password is required at bootup. Supervisor password is required by most setup options.
Both passwords	User password is required at bootup. Supervisor password is required by most setup options.

Beep Code Error Messages

During a normal bootup, a single short beep signifies that the system is OK. Other beep patterns signify errors. The number of beeps indicates the specific error that occurred.

The Sony Online Support technical representative will need to know how many beeps your system produces if there is an error, so be sure to count the number of beeps before calling for support.

PCI Configuration Status and Error Messages

The following is a list of status and error messages that may appear on your system from time to time.

Message	Meaning
Floppy Disk Controller Resource Conflict	The diskette controller has requested a resource that is already in use.
NVRAM Checksum Error, NVRAM Cleared	The NVRAM data was reinitialized due to an NVRAM checksum error.
NVRAM Cleared By Jumper	The Clear CMOS jumper block has been changed to the clear position.
NVRAM Data Invalid, NVRAM Cleared	Invalid entry in the NVRAM.
Parallel Port Resource Conflict	The parallel port has requested a resource that is already in use.
PCI Error Log is Full	This message is displayed when more than 15 PCI conflict errors are detected. No additional PCI errors can be logged.
PCI I/O Port Conflict	Two devices requested the same resource, resulting in a conflict.
PCI IRQ Conflict	Two devices requested the same resource, resulting in a conflict.
PCI Memory Conflict	Two devices requested the same resource, resulting in a conflict.
Primary Boot Device Not Found	The designated primary boot device (hard disk drive, diskette drive, CD-ROM drive, or network drive) could not be found.
Primary IDE Controller Resource Conflict	The primary IDE controller has requested a resource that is already in use.
Primary Input Device Not Found	The designated primary input device (keyboard, mouse, or other, if input is redirected) could not be found.
Primary Output Device Not Found	The designated primary output device (display, serial port, or other, if input is redirected) could not be found.
Secondary IDE Controller Resource Conflict	The secondary IDE controller has requested a resource that is already in use.
Serial Port 1 Resource Conflict	Serial port 1 has requested a resource that is already in use.

Serial Port 2 Resource Conflict	Serial port 2 has requested a resource that is already in use.
Static Device Resource Conflict	A non-Plug and Play ISA card has requested a resource that is already in use.
System Board Device Resource Conflict	A non-Plug and-Play ISA card has requested a resource that is already in use.

DMA Channel Assignments

This shows the factory default values. Windows 98 reassigns resources to best meet the needs of a particular configuration.

DMA Channel	Plug & Play	Default Assignment
0	Yes	Open
1	Yes	Sound
2	Yes	Standard diskette drive controller
3	Yes	Sound
4	N/A	16-bit DRQ/DACK from second DMA controller
5		Open
6		Open
7		Open

IRQ Assignments

This shows the factory default values. Windows 98 will reassign resources to best meet the needs of a particular configuration. PCI IRQs can be shared between several PCI devices.

IRQ #	Plug & Play	Default Assignment
0	N/A	System timer
1	Yes	Standard 101/102-key or Microsoft® Natural Keyboard
2	N/A	IRQ from second programmable interrupt controller
3	Yes	Communications ports (COM2 and COM4)
4	Yes	Communications ports (COM1 and COM3)
5	Yes	Sound
6	Yes	Standard diskette drive controller
7	Yes	Printer port (LPT1)
8	N/A	System CMOS/real time clock
9	Yes	USB
10	Yes	Sound/LT WinModem
11	Yes	Matrox MGA-G200 AGP
12	Yes	PS/2-compatible mouse port
13	N/A	Numeric data processor
14	No	Primary IDE controller
15	No	Secondary IDE controller

System I/O Address Map

Address Range (hexadecimal)	Plug & Play	Description
0000 - 000F	N/A	DMA controller
0020 - 0021	N/A	Programmable interrupt controller
0040 - 0043	N/A	System timer 1
0048 - 004B	N/A	System timer 2
0060	N/A	Keyboard controller
0061	N/A	NMI status and system speaker controller
0064	N/A	Keyboard controller
0070 - 007F	N/A	NMI mask/real-time clock
0081 - 008F	N/A	DMA controller
00A0 - 00A1	N/A	Programmable interrupt controller
00C0 - 00DE	N/A	DMA page registers
00E0 - 00EF	N/A	Reserved
00F0	N/A	Clear numeric data processor error
00F1	N/A	Reset numeric data processor
00F8 - 00FF	N/A	Numeric data processor
0170 - 0177	No	Secondary IDE controller
01F0 - 01F7	No	Primary IDE controller
0201	Yes	Gameport™ joystick controller
0220-022F	Yes (Rev 1.1)	Sound port
02F8 - 02FF	Yes	Serial port 2
0330 - 033F	Yes	Vortex MPU-401 interface
0370 - 0375	Yes	Standard diskette drive controller
0376	No	Secondary IDE controller command port
0377	No	Secondary IDE controller status port
0378 - 037F	Yes	Parallel port 1
0388 - 038B	Yes	Vortex Sound Blaster Pro emulation
03B0 - 03BB		Matrox MGA-G200 AGP
03C0 - 03DF		Matrox MGA-G200 AGP
03F0 - 03F5, 03F7	Yes	Standard diskette drive controller (primary)
03F6	Yes	Primary IDE controller

Address Range (hexadecimal)	Plug & Play	Description
03F8 - 03FF	Yes	Serial port 1
0CF8 - 0CFF	N/A	PCI configuration space

Memory Map

Address range	Default configuration
0FFFFFFF - FFFFFFFF	BIOS ROM
000E0000 - 000FFFFF	System BIOS (shadowed in DRAM)
000C8000 - 000DFFFF	Expansion region (shadowed in DRAM)
000C0000 - 000C7FFF	Video BIOS (shadowed in DRAM)
000A0000 - 000BFFFF	Video buffer (SMM space non-cacheable)
00080000 - 0009FFFF	Optional memory space gap (DOS applications)
00000000 - 0007FFFF	DOS applications (no read/write protect; always cacheable)

Chapter 10
Specifications

This chapter describes the technical specifications for the Sony PCV-E314DS computers.

Processors

PCV-E314DS	400 MHz Intel Pentium® II processor (with 100 MHz FSB)

Chipset

82440BX-100 AGP/PCI/ISA chipset

PCI Bus

PCI Level 2.1, 33 MHz zero wait state
4 PCI slots (1 open)

Memory Modules (DIMMs)

Installed memory	PCV-E314DS: 64 Mbytes SDRAM (100 MHz)
Maximum memory	256 Mbytes (128Mbytes in each socket)
Voltage	3.3 V memory only
Pins	168-pins with gold-plated contacts
SDRAM type	PC100, 60 ns, unrestricted CAS latency 3, unbuffered, Intel 4-clock, 64 bits (non-ECC)

DIMM Configurations

DIMM1*	DIMM2*
0, 8, 16, 32, 64, 128	0, 8, 16, 32, 64, 128

* *The PCV-E314DS is shipped with 64 MB. SDRAM is expandable to 256 MB. Computer SDRAM is unbuffered DIMM, specification Rev. 1.0 or later. Supports SDRAM memory. Does not support EDO memory or buffered DIMM memory. Memory can be installed in either socket. Memory size can vary between sockets. DIMMs can be single- or double-sided. DIMMs must be 3.3V unbuffered 4-clock, 64-bit or 72-bit 100 MHz SDRAM module. Use only 100 MHz FSB-supported memory. Do not mix 66 MHz memory with 100 MHz memory.*

L2 Cache

Installed	512 kbytes secondary write-back cache (in processor), direct-mapped organization, BSB cache
Controller	Intel 440BX Host Bridge/Controller

Graphics

Controller*	Matrox MGA-G200 AGP with sidebands and pipelined 64-bit PCI graphics accelerator
Video memory	8 Mbytes SDRAM @ 125 MHz
Resolution (displayed resolution depends on the graphics display you use)	
True color (32 bits)	Up to 1920 x 1080 at 70 Hz non-interlaced
True color (24 bits)	Up to 1920 x 1080 at 70 Hz non-interlaced
High color (16 bits)	Up to 1920 x 1200 at 70 Hz non-interlaced
256 colors (8 bits)	Up to 1920 x 1200 at 70 Hz non-interlaced

* *Supports DDC-1 and DDC-2b standards for Plug and Play displays.*

Audio

Sound chip	Aureal 8830 plus AC97
Wave synthesis	Aureal wavetable synthesis effect
Sound effects	A3D stereo
Digital audio output	Optical Digital Audio Output (IEC 958 compliant, SCMS compliant)
Audio sampling rate	Up to 48 kHz at 16 bits
Rear panel connectors	Mic (for microphone) Line In (from stereo audio source) Headphones (for stereo headphone)

Communications

Modem	V.90-compatible data/fax modem*
Fax	14.4 kbps maximum
i.LINK (IEEE-1394)	400 Mbps, OHCI chip set

* *Your modem is capable of downloading at 56 Kbps using K56flex technology/V.90 . Your phone service, online service, or Internet Service Provider may not support this technology or operate at this speed.*

I/O and Expansion Slots

Serial ports	One high-speed NS16C550-compatible port
Parallel port	One high-speed bi-directional Centronics-compatible port with ECP and EPP modes
MIDI/game port	One (supports MIDI in/out or two joysticks — adapter cable not supplied)
Modem ports	Two RJ-11 connectors (for line and phone)
USB ports	USB1 (side of front panel) and USB2 (rear panel)
PCI slots	One available slot. Maximum length for add-in cards is 7.75 inches
IDE connectors	Primary and secondary (each supports two IDE drives)
S Link (Control A1)	One connector for audio devices such as CD changer or minidisc deck. Connected device can be controlled from computer using the Audio/Video application in VAIO Space.

Drives and Controllers

Diskette controller	765A-compatible (supports up to 2.88 MByte)
Diskette drive	1.44 MByte 3.5-inch MFDD
EIDE controller	Supports up to four EIDE drives (supports PIO Mode 4 EIDE drives and Ultra DMA/33 Mode drives)
IDE hard drive	PCV-E314DS: 10.2 GByte (bus-mastering EIDE driver installed)
DVD-ROM drive	DVD-ROM disc: 5X (maximum performance).* CD-ROM disc: 24X (maximum performance).

* *DVD-ROM drive also plays CD-ROM discs. Data on the DVD-ROM is read at a variable transfer rate, ranging from 2X at the innermost track to 5X at the outermost track (the data transfer standard 1X rate is 1385 kbytes/s). The average data transfer rate is either 3.3X (4616 kbytes/s) or 3.4X (4709 kbytes/s), depending on your specific system. Data on a CD-ROM disc is read at a variable transfer rate, ranging from 10X at the innermost track to 24X at the outermost track (the data transfer standard 1X rate is 150 kbytes/s). The average data transfer rate is 17X (2250 kbytes/s).*

System BIOS

Make and model	Phoenix-based
ROM	2Mbit flash-ROM*
Passwords	User and supervisor passwords supported
Recovery boot block	Supported
Power management	APM 1.2
Advanced features	ACPI-1.0 compliant hardware for use with APM and PNP BIOS APIs
Plug and Play devices	Supported with steerable DMA channels and interrupts
Special features	PC-98 ready, multi-boot, PCI add-in card auto-configure

* *Flash-ROM update utility is available from Sony's web site at http://www.sony.com/pcsupport.*

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